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SERVICE BULLETIN

U. S. Forest Service

Washington, D. C. - January 3, 1921

(Not for Publication)

HEAR YE! HEAR YE!

To One and All the New "Service Bulletin" Makes Its Initial Bow and Wishes You a Happy Prosperous New Year.

Vol. V, No 1.

UP

By George Matthew Adams

If you will but engrave upon the tablet of your heart this little word - up - and let it lead you, you will never know how to fail.

Everything grows up--beautiful fragrant flowers, trees, cities, babies, nations, the world!

What you are in this big life is revealed in the way you interpret your up. It's so easy to fall down. Anyone can do that, over and over again. But it's how you get up that counts. It takes real courage to get up, and stay up.

Long ago, that wonderful old patriarch, Edward Everett Hale, said: "Look up--not down." It is the watchword of every passing night, indicative of a sunstrewn dawn, this up of yours!

The vision of this onward world is - up.

No man ever fell so low but he desired to get up. It is the one great aspiration that the great God plants in our souls.

But it isn't enough to get up yourself. You must always remember that -

"He climbs highest who helps another up!

National Forests as Demonstration Areas

Letter from Colonel W. B. Greeley, Forester, to Mr. L. L. Bishop, Forest Supervisor, Florida National Forest:

"I greatly appreciate the opportunity which I had recently to spend two days with you on the Florida National Forest, particularly as this was my first glimpse of the State and of the splendid work which you and your rangers are accomplishing. The Florida National Forest has impressed me very greatly. It is not large in size as compared with many of our National Forests in the west; but it has a very important place in demonstrating the possibility and value of a conservative and far-sighted handling of longleaf pine lands for the production of both naval stores and lumber.

"The fact that the Forest Service has obtained good yields of naval stores by the conservative methods of chipping and cutting under which the same timber has been worked for ten years and will be worked for fourteen years, with practically no loss in the form of dead or injured trees, is very significant. The successful use of this method of turpentine orcharding is demonstrating to naval stores operators throughout the Gulf States the practical wisdom and commercial possibilities of a system of extraction under which the naval stores industry can be made much more permanent than it has been hitherto, and with practically no loss in the volume of merchantable timber ultimately cut from the forest.

"One of the things which must be worked out as part of our general progress in forest conservation is a system of extracting gum turpentine which will make this industry and its valuable commercial products a permanent resource of the Southern States. We must develop a plan for tapping second growth timber, somewhat along the lines used in France but adapted to commercial requirements in the

United States, under which this can be a continuous forest industry, obtaining yields of gum from the same trees for 20 or 30 years, right up to the time when they are cut and converted into lumber. Without some method of this nature the gum turpentine industry will soon cease to exist. I am hopeful that the Forest Service can extend the instructive experiments in various methods of conservative chipping and cupping which you have already initiated on the Florida National Forest in order to work out completely a plan of tapping second growth timber without injury which can be adopted commercially by the owners of pine land throughout the South.

"The Florida National Forest is breaking ground in showing how forest industries in that region can be made permanent, furnish permanent support for local communities, and afford permanent labor to a considerable group of forest workers. That is just what a National Forest stands for in any section.

"The resources of the Florida National Forest are not very extensive but such as they are they will be permanent and will contribute steadily their full quota of naval stores and timber to the supply of the region and country. You will soon be prepared to begin the cutting of timber on areas where the 14 years of turpentine operations have been completed; and from then on the National Forest will, in addition to its naval stores, furnish 7 or 8 million feet of timber yearly for all time to come; and ultimately as our lands become better stocked with trees, the yields both of naval stores and of lumber can undoubtedly be largely increased. To work out and demonstrate just what forest conservation means in a specific case like this is a splendid piece of public service to the State and to the Nation; and I know that you and your Rangers have this ideal clearly in mind in all of your work.

"I have only the highest commendation of the work which you and the other Forest officers are doing, and I wish you all success."

In answer to the above letter District Forester F. W. Reed wrote the Forester as follows:

"I wish to express my appreciation of your generous letter of commendation to Supervisor Bishop of December 11. It will be highly prized by the officers of the Forest. I, myself, am particularly gratified because your letter indicates that you have a full appreciation of what we are trying to accomplish in District 7.

"On the Florida Forest we are preaching the doctrine of profitable forestry through intermediate yields and we are writing our sermons on the ground so that the lessons may be learned by those hard-headed but practical people who persist in drawing conclusions from what they see rather than from what they read.*****

"The real value of the Eastern National Forests lies in their ability to serve as demonstrations of what is right and what is practical in forestry. They should be proving grounds where private forest owners may come to see and weigh for themselves the results of actual field tests.*****

"The big thing we must show the private timberland owner is the possibilities inherent in intermediate yields. Our preachments on forestry in the past were confined largely to the idea of producing a crop of saw-logs at the end of a long rotation. Our logic was irrefutable and our calculations models of mathematical precision but we convinced mighty few people, for the capitalist, both small and large, is attracted only to investments promising early and frequent returns of hard cash. Real dollars must be available for taxes and current expenses. As fast, however, as we can show from actual practice that early and frequent cash returns are possible, private capital will take a real interest in conservative forest management and actually get busy.

"Examples to back up our precepts already exist on the Eastern National Forests and with each succeeding year they will increase in number and value. In Florida we are showing that attractive intermediate yields can be obtained from proper methods of turpentining; in the Southern Appalachians from the sale of acidwood, pulpwood and ties obtained through thinnings and improvement cuttings; in New England through the sale of minor forest products to the wood-using industries of that intensively developed industrial region. Throughout the District we are obtaining cash returns from grazing, fish and game, and recreation. Altogether the possibilities for development along these lines are enormous.*****

"In brief then, the big function of the National Forests of the East is to serve as demonstration forests. The most important thing for them to demonstrate is the possibility of obtaining early and frequent revenues through intermediate yields.*****

A Token of Esteem

As a tangible reminder of the esteem of Forest Service officers, Santa Claus, in the person of District Forester Redington, presented to Col. Graves a handsome cigar humidor (made at Madison) and to Mr. Potter a motor lunch kit. On these gifts were plates inscribed:

To
Col. Henry S. Graves
Chief Forester of the U. S.
1910-1920
From many of his friends in the Service.

To
Albert F. Potter
Associate Forester of the Forest Service
1910-1920
From many of his friends in the Service.

Mr. Redington's letter to Col. Graves was published in the December 20 "Weekly Bulletin," and his letter to Mr. Potter follows:

"It is with pleasure that I accept a commission from the District Foresters and the Director of the Forest Products Laboratory to present to you a gift which it is hoped will not only be of utilitarian value but will serve as a reminder of the esteem and regard in which you are held by the field force of the Forest Service.

"Almost 'the memory of man goeth not back' to the beginning of your connection with the Service. You had an important part in laying the keel and the frame work of the ship. You were one of those present when G. P. christened her as she slid off the ways in 1905. And as first mate since 1910 you took your watch at piloting her through the rough seas of the past decade. By your vision, your thorough knowledge of practicalities, you were most largely responsible for placing one of the great activities of the Service on a secure footing, and in doing this, and other things, you made a deep impress on those outside, as well as those within the organization.

"The regret at your decision to retire in 1920 was widespread, being tempered only by our certain knowledge that your interest in Forestry and the personnel of the Service would suffer no lapse.

"It is the sincere hope of all for whom I have the honor to speak that the unofficial years of activity which lie before you may be filled with happiness and success and that the men of the Service may meet you many, many times on the trails that you may travel."

Fire Lookouts and Aerial Patrol

By C. W. Boyce

In comparing the relative merits of the lookout system and the aerial forest patrol one should not let the matter of competition enter. There is no doubt in the minds of those cognizant with both methods that each has its advantages and also its disadvantages, which, instead of placing the two systems on a competitive basis, rather tend to make them supplementary one to the other. The disadvantages of the lookout system are, in most cases, the advantages of the aerial patrol.

The lookout is limited by intervening ridges between it and the fire, lack of mobility, oblique view, and inability to function properly during periods when the country is covered by a smoke blanket. The aerial patrol, because of its mobility, can go directly over a fire, obtain a direct vertical view of the fire and its attendant conditions, including an excellent idea of its size and need of immediate attention. Furthermore, it was found during the work of this past fire season that during the periods when the smoke blanket covered the country the aerial observer was not seriously hampered by the smoke under normal conditions when he flew at high altitudes. At times when the lookout was entirely shut off from a comprehensive view of the country, the observer from an airplane had little difficulty in picking up fires.

A further advantage of the airplane lies in its use as a means of reconnaissance on large fires. This system was tried out to good effect in California with the result that it was found that a quick and comprehensive view of any situation could be secured to aid the suppressive crew in their fight. By means of the wireless telephone, communication between the airplane over the fire and the ground at the fire can be established in a few minutes, with the result that the situation as seen from the air can be reported to the man in charge of the fire fighting, immediately. This will lead, upon its further development, to actual direction of the suppression from the air. The lookout has been used in this capacity to some extent, but due to its fixed position and its oblique view has not met with success.

No method of fire detection has been devised as yet that can actually compete with the lookout system. The lookout has a fairly good view of the country most of the time and is always on the job, so to speak. The proper merits of the lookout system and the aerial forest patrol lead one to believe that the latter should be developed as a needed supplement to the former, using it as a check upon the lookout system in general, and relying upon it at all times when the lookout is shut in by the smoke blanket. With this idea properly impressed, the development of the forest patrol should be carried out, special attention being attached to the cooperation and the establishment of an adequate means of communication between the two systems.

Take the Plunge

"Service" in the new name of our Bulletin stands for two things: 1st, as symbolic of the Federal organization to which we all belong, and, 2nd, as a synonym for "benefit to others."

In so far as is humanly possible for an inexperienced editor to serve the news wants of several thousand people, from the Forester clear down the line to Smoke Chasers, the Bulletin and the writer are at your command. But no one man can swing such a job successfully without backing and cooperation.

The Service Bulletin is your own publication, and its success or failure will in no small measure depend on the individual members of the Forest Service--on YOU. I could fill its pages every issue with clippings from outside sources. But is that what you want?

To my mind the Bulletin should contain write-ups on the big news and problems of the Service and forestry in general, coupled with personal notes which will be of interest to all our men and women. Public Relation officers in the various Districts can not supply all this material; much of it must come from individual officers.

Bear this in mind: The total Forest Service force on December 1, 1920, numbered 2633 employees. Of this total 10% are in Washington; 7% at the Madison Laboratory; 17% in the District offices, and 66% on the National Forests. Also, that there are, probably, 1500 to 2000 women who at various times read the Bulletin.

The editor is not looking for literary "gems," but articles and news on live topics of interest to the Service. Pick out your story on the Oliver (double space), sign it, and send it addressed to "Editor, Service Bulletin, Forest Service, Washington, D. C." Be brief and to the point, and don't try to make a report out of a news item.

I am asking your help to make the Service Bulletin both interesting and a credit to our organization. Let "an article for the Bulletin" be one of your New Year's resolutions--it will be a new one for most of you, anyway. Then why not "tune up?" Take the plunge!--The Editor.

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Yea, Bo! We've Been There!

William Lyon Phelps, professor of English Literature at Yale, declares he gets credit for only 25 per cent of the after-dinner speeches he actually makes. "Every time I accept an invitation to speak, I really make four addresses. First, is the speech I prepare in advance. That is pretty good. Second, is the speech I really make. Third, is the speech I make on the way home, which is the best of all, and Fourth, is the speech the newspapers next morning say I made, which bears no relation to any of the others."

Strange Foreign Trees

(The truth of the facts presented in the following items clipped from the "Canadian Forestry Magazine" is not vouched for. Parts of Canada are still wet - so take them for what they are worth.--Ed.)

In western India there is a tree that blossoms only in the dark. For some reason, possibly because as ordinarily seen it is of plain and desolate appearance, it is called the "sorrowful tree." Every evening in the year it breaks into bloom, but with the rising sun sheds or folds up its flowers.

The cocoanut palm is an example of a single tree which can be made to supply all the needs of a not too luxurious member of society. In certain islands of the southern seas this prolific plant furnishes the natives with the wood from which they build their houses, their boats and their utensils. When the leaves are young they are woven and braided into hats, baskets, cloth, fans, bedding, paper, and thatch. The ribs of the mature leaves are converted into arrows, spears, brooms, torches, and paddles. Out of the flowers come wine, vinegar and sugar. The fruit makes a delicious food, and its husks yield cord and matting. Even the roots are sometimes used for food.

The "Sneeze wood" tree of South Africa has a unique way of protecting itself against enemies. Its wood is light brown in color, runs very close grained, is so hard as to sink in water, is bitter to the taste, and emits a microscopic dust on being sawed or cut. No insect or worm will touch it and men who handle it are continually sneezing.

The sapota tree is the "chewing gum tree." Chicle is the proper name of the life blood of this tree from which the gum is made. It grows in South America, Central America and Mexico. It produces a fruit called the sapodilla pear, and has a straight, clear timber trunk.

The natives of the Niger gather immense quantities of butter from the butter-tree. It abounds in such great quantities that it is likely to become an article of commerce.

If a man wishes milk when traveling in the forests of Caracas, South America, Mother Nature supplies him most abundantly from the cow-tree. This product has not only the exact appearance but all the qualities of cow's milk.

When Is a Report Not a Report?

By Will C. Barnes

(Answer) When the report is written so interestingly and made so readable that it at once ceases to be a report and becomes a story book which no man drops until he has read it to the very last word.

Some Forest officers labor under the delusion that many reports are called for by their superior officers merely to give them, the aforesaid S.Os, an opportunity to establish their position in the official world and keep the F.Os from contracting mental strabismus; also that on arrival at its destination the manuscript is properly stamped with the receiving stamp by the mail clerk and immediately stored away in the dark recesses of the file rooms of the Washington office, there to await its last summons in the shape of the official charged with the disposal of waste paper.

As a constant reader of official reports and as an honest man desirous of stating the exact facts, I am bound to admit that there have been, and probably always will be, reports that are so deadly in their lack of ideas, so utterly without character or information as to the matter with which they are dealing, or attempting to deal, that the person forced by his official status to wrestle with such documents may give them but a superficial reading and immediately consign them to the oblivion of the file cases.

But listen, Percy! There are also official reports that are to the weary S.Os like unto the shadow of a great rock in a desert land; as welcome as the flowers in May, or the bi-monthly visits of the Fiscal Agent in the Washington office with his little box full of new crisp greenbacks. Of this kind is the "Report on the Game Protection and Patrol of Winter Elk Ranges on the Absaroka and Gallatin Forests during the Winter of 1919-20." It is an official report of official action, but from the first to the last of its 75 or more pages it is an absorbing story of a winter's work well done,--a story of fights with Montana blizzards; of trailing a band of lawless tooth hunters and game poachers across weary miles of snow; of strange meetings with the wild animals of the mountains; of succor to starving elk hemmed in by deep snows; of a vain attempt to follow up the trail of a lone man who, evidently lost, had broken into one of our ranger stations in search of food and whose dead body was later found when the snow had left the mountainside upon which it lay. It is a story alive with action, interesting incidents on the winter doings of the animals that inhabit the mountains and find their living during the long, snowbound winters. And with it came a remarkable series of photographs of wild animals, all the way from a beaver who posed in the snow for his "picter" to a hugh bull elk caught in the deep snow and too weak to move, yet proudly held up his great antlered head while his photograph was taken, then sank into the snow to breathe his last.

Did this report go into the files unwept, unhonored, and unsung? Not that anyone here knows of! It was passed about the Atlantic Building from one man to another to be read and enjoyed, and then went the rounds of some of the other bureaus in the city, where it received warm commendations. Finally, the Forester has decreed that it merits publication as a bulletin that the public may learn from it not only what we are doing in the way of game protection, but also something of the breed of men we have in our Service.

Several men took part in the work of this game patrol. Forest Ranger William J. Bell of the Bitterroot Forest, and Forest Rangers D. H. Stevenson and W. R. Johns of the Absaroka were detailed to this game protection patrol and did most of the field work. On the Absaroka the two latter aided materially in the preparation of the report. On the Gallatin Rangers W. H. Martin, Vincent Evans, Knapp, and Chipperfield handled the patrol work, the two parties cooperating closely. No State game wardens took part in the patrol. The report is signed jointly by Ernest W. Shaw, Supervisor of the Absaroka, and Burr W. Clark, Supervisor of the Gallatin Forest.

Six Rules for Saving Money

Rule 1.--SAVE SLOWLY

Many people become discouraged by reason of the fact that they start to save too much. The first savings deposit should be a sum which is small enough not to be a great sacrifice. Later there will be plenty of time to increase the amount.

Rule 2.--SAVE REGULARLY

The man who plans to save ten dollars each month has far better chances for success than the man who plans to save twenty dollars this month and nothing next month. Regular saving soon becomes unconscious saving. Most of the successful money savers add to their account every pay day.

Rule 3.--KEEP A RECORD.

If you would be successful in saving money, keep a record of your expenditures. Almost everyone tries this plan at some period, but many fail. If you would avoid this failure yourself, keep two points in mind.

1.--Make your expense record as simple as possible.

2.--Keep your account in spite of difficulties. There are few successful savers who do not keep close account of their expenditures.

Rule 4.--HAVE A PLAN

The general conviction in your mind that you ought to save money is not sufficient to make you successful in carrying out the idea. Have a savings plan. Name a certain amount to be saved within a given period of time, and apportion this sum to the intervening months.

Six Rules for Saving Money (Continued)

Rule 5.--PUT SAVING FIRST.

Put saving first. If you say to yourself, "Now this month I am going to spend very little, and put all that is left into the bank," you will find when the end of the month arrives that there is nothing left. If you really intend to save, put your money into the bank as soon as you get it.

Rule 6.--STICK.

The postage stamp certainly has one great virtue, it sticks to one thing until it gets there. You may have difficulties, defeats and trials in your plan for saving money, but this should not discourage you. If you are determined to save money, stick to your proposition, and success will be yours.--From "How to Save Money" by A. C. Foster.

Forest Homes

By Charles H. Shinn

The other day one of the most wide-awake of California newspaper men, G. E. Reynolds, had a page in the Stockton Record headed "A National Forest Cabin Solves Vacation Problem." He went on to describe half-acre cabin sites rented from the Government.

This opens up a very large and fruitful domain for energetic work by forest officers. We have got so far as to create very popular summer camp centers in the National Forests. Now, we must take the logical step forward; we must have not only the "vacation cabins" that Mr. Reynolds so well describes, what we need and must have as soon as possible is a special survey of our Forests in order to locate thousands of one-acre sites for permanent homes. Each such site must have water, reasonable accessibility, and natural beauty. The right sort of people will be sure to desire it right off.

This country has thousands of persons of small settled incomes, such as pensions, who are ex-teachers, ex-government employees, etc., and who would be absolutely happy in such homes, providing that they were well-located, rightly advised and given the real mountain fellowship from the first go. Their value to the Forests in which they were thus settled would be far beyond price.

A Forest Supervisor, who having found say a hundred home-sites would have to be able to tell applicants about the cost of a cabin, the nearest routes to store and post office, connections with road system and telephones, and to sum up, what yearly income would be essential in order to live there. A book might be written about the tact, patience, knowledge and honest human fellowship required to firmly establish a hundred new permanent homes on acre-sites in a National Forest. But how greatly it would be worth while!

A pioneer forest officer in 1903 was told by a cattle owner who had been refused a larger permit: "You people are going to drive out everybody; you want to put a ten-foot barb-wire fence around your condemned reserve!" The earnest reply came: "Please wait, and give us a chance. I am sure that we shall manage to have more timber, more grazing, more hunting, more campers, very many more permanent homes, and larger towns in these mountains within twenty years than if this Forest did not exist." It is coing out that way.

Since about every possible piece of land fit for entry and for making a living on is now privately owned, is it not practicable to develope the home-site possibilities, study each spring and watersign and think in terms of single acres?

(Note:--This discussion does not apply to some of the National Forests of District 7.--Ed.)

Adventures of Zenas Leonard

(1831-1836)

(Note:--Many of us, born or bred in the West, have an idea that the customs of the plains and mountains, as we see them from day to day, have been developed locally during recent years. But glance over the following observations made nearly 100 years ago, and you will see that they used to do things then just as we do them now. This is interesting, and brings to mind the fact that our National Forests, with their old-time legends and stories, are also storehouses of historic wealth. Much of this data is fast getting beyond our reach because we make no effort to collect and record it. Why not get together some of the old-time yarns of cattle and sheep wars, land deals, timber thieves, wild game, etc., which tie in with our National Forests, not only for present but future use?--Editor)

"On the first evening we spent in our new encampment, we were shown the manner in which the Spaniards take wild cattle, which was quite a different practice from that used by the Indians of the Rocky Mountains in taking buffaloe*****. Never less than two goes at a time, who are always on the back of their fleetest horses, each provided with a strong cord with a noose fixed on one end. When the animal is started they give chase and the rider that overtakes the game first, throws the noose around its neck or horns, and begins to draw the noose tight. When the noose is found to be secure he gives the cord several winds around the pummel of the saddle (which is made strong for this purpose) and stops his horse all of a sudden, which throws the animal to the ground and frequently breaks its neck. If the animal is thrown without injury, the other hunter comes forward with his noose and fastens it around its hind foot, which enables them to manage the stoutest and most ferocious bulls. Having thus captured their object of pursuit, they sometimes have great trouble in getting them home alive. The one with the cord around the animals head goes before while he with the cord fastened to the hind foot stays in the rear. If their prisoner becomes refractory and refuses to advance, the man in the rear commences whipping, while he in front uses many devices to provoke the brutte,untill it in a fit of rage makes at him, when he puts off at all speed, and sometimes runs two or three malies in this way without stopping. In this manner they brought a large handsome cow into our camp this evening which we purchased, and found to be good beef.

"These people have no fences around their cleared or cultivated land, although they raise an immense amount of stock, such as horses, mules and horned cattle--all of which range at large over these extensive prairies all seasons of the year, many being in a manner totally wild, so much so, that when they wish to milk a cow, they mount one of their coarsers and noose her, fasten the cord to a tree, and then tie her feet, when she is forced to be quiet.

"They appear to do most of their work on horse-back. If they want wood they repair to the forest, ride along until they find a log to suit them, when they drop their noose around the end of it; and thus drag it to their homes. They are very expert on horseback, nor could it be otherwise, for they are constantly riding & never appear so well satisfied as when they are seated on a prancing steed." (To be continued)

Think It Over

"Knowledge properly applied is power."

"Thinking is the hardest job that we can undertake, but it pays."

"A good memory is the natural result of creative thinking."

"Reliability is made up of such qualities as self-confidence and cheerfulness."

"The value of any man in your employ is determined by the amount of supervision he requires."

"If you do not love your job don't worry about it--some other fellow will soon have it."

"Personality is the greatest power in business."

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Be Sure Your "Snipe" is Out!

There are 21,718,448 cigars burned up in the United States every twenty-four hours, and over 23 million cigarettes.

Forest Service Nurseries - and Others

By C. R. Tillotson

It doubtless often happens in the Forest Service that our noses are so close to the grindstone and our opportunities so few for seeing work of a nature similar to ours which is conducted by other agencies that we fail to realize and appreciate our own merits. During the past summer and fall, I have had the opportunity of seeing the Forest Service nurseries at Cass Lake, Minnesota, and East Tawas, Michigan, and also those which are operated by a number of States and private organizations. I believe I can say without prejudice that the Forest Service nurseries were, everything considered, considerably superior to those of any other organization. This was evidenced not only in the general appearance of the nursery itself and its surroundings, beds free of weeds, nursery tools in place, good equipment, small losses from any cause in the beds, and well-developed stock, particularly in respect to root formation, but also in the spirit manifested by the men who were in charge of the nursery operations. The methods which are being employed are strictly up-to-date and instead of following blindly along old paths, I find there is a continual striving to improve upon the methods which are in use and thus improve the planting stock.

In contrast to this, a number of the other nurseries which I saw were in a condition which I am sure would not be tolerated in a Forest Service nursery. In two of these there was very poor germination of seed because of the use of seed whose quality was unknown and worse was not determined by test previous to sowing. Other nurseries were so extremely weedy that their appearance was decidedly unattractive, I feel sure the stock must have suffered, and it would have been extremely difficult even to make an estimate of stock on hand. Further than this, there did not seem to be the same spirit of striving for better things which is so manifest at our nurseries.

The Second-Foot of Water

"Second-foot," as defined by the United States Geological Survey, Department of the Interior, is an abbreviation for cubic foot per second and is the unit for measuring the rate of discharge of water flowing in a stream 1 foot wide and 1 foot deep at a rate of 1 foot per second. It is generally used as a fundamental unit in measurements of stream flow.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

An "acre-foot" is equivalent to 43,560 cubic feet and is the quantity required to cover an acre to a depth of 1 foot. The term is commonly used in connection with the storage of water for irrigation.

A flow of 1 second-foot equals 7.48 United States gallons a second, 448.8 gallons a minute, or 646,317 gallons a day. As a California "miner's inch" equals 0.187 gallon a second, there are 40 California miner's inches in 1 second-foot.--U.S.G.S. Press Bulletin.

New Legislation in Congress

Good News: House Appropriations Committee, at work framing the Legislative, Executive and Judicial Appropriation Bill, on December 27 decided to include in the measure the bonus of $240 a year for employees of Federal and District Governments.

Washington Notes

The Forest Service hearings before the Sub-Committee on Agriculture of the general Appropriation Committee took place on December 27. The general attitude of the members of the Committee reflected the present temper of the country, which, due to the depression in financial and business circles, is adverse to increased expenditures by Congress and consequent higher taxes. It is certain that the increases asked for in the Forest Service appropriations will meet with strong opposition. We may still hope to get a part of the additional funds needed and requested--but we will be lucky if we do.

If anyone thinks in a moment of disappointment that our Board of Directors in Congress should show more appreciation of scientific work and should possess more power to discriminate in favor of good work in order to exempt from the general slashing of estimates those Bureaus whose work does not merit slashing--if anyone is tempted to think along these lines there is a companion thought he should make room for. Congress is a representative body. If it doesn't appreciate scientific work it is because the folks at home do not. If it makes sweeping reductions in estimates when it should pick and choose the place to apply the ax, it is because the folks at home have not learned to critically appraise the value of the various services that are being performed for them.

What's the answer? First and foremost, the Bureau that wants the favor of Congress needs to be sure that it does produce net public benefits for which there is a market. Second, it needs to inform the folks about these benefits and their relation to taxes, community welfare, etc. This doesn't mean that the Branch of Public Relations alone should tell them of our Forest work--every one of the 2633 permanent employees should constitute himself a self-appointed committee of one to see that his neighbors and acquaintances know the essential truths about fire protection, research, timber sales, grazing,etc.--Roy Headley.

District 2 - Rocky Mountain District

Landscape Architects Recognize Value of National Forests: Word has just been received from Professor J. S. Pray of Harvard of the action of the American Society of Landscape Architects modifying the duties of its standing Committee on National Parks so that it is now the Committee on National Parks and National Forests. While the society has not a large membership, when compared with some societies, it is composed of nearly all the successful men of recognized standing in the profession throughout the country. It wields a big influence through its many clients who come to its members for advice. The move puts an official stamp of recognition on recreation in the National Forests which no other organization is so well qualified to do. The society is very conservative and never acts without competent knowledge, and action must follow a very well considered study of the advisability of enlarging the scope of a committee. Most of the members of the Society are called upon to talk to the public on Landscape Art and if its members can become familiar with recreation in the National Forests, it will be a large help in having the outdoor life features of the National Forests presented to people of culture and influence. This Committee must have on it men of national reputation as Landscape Architects, and it is not altogether improbable that their services could be secured in an advisory capacity on the principles of recreation development which the Service now faces.

The action of this organization is very encouraging and must do a great deal toward convincing Congress of the need of recognizing the necessity for a well-ordered development of the recreational resources of the National Forests.

The Motor Car on the Forest: In a recent issue of the "Weekly Bulletin" Mr. Benedict advocates that the Service start at once to motorize its force as an effective means of keeping pace with its increased business. For men on special work where there is any great amount of Job-to-Job travel we are agreed that a material saving in time can be effected by the use of a car. Both the Supervisor and Ranger also have a large amount of travel where the use of a motor car will save a great deal of time. But would there not be a tendency to overlook a great many little things, which in the end mean so much, if the use of the motor car is given too much encouragement? We are all, more or less, human,and the natural tendency is to travel the best highway in order to reach our objective point. The little details that require so much of our attention are generally found removed from main lines of travel, and only with the primitive horseback methods can we give everything the attention it should receive. It has been our experience that a great deal of trespass is prevented by "just happening" to pass through ranches at intermittent periods, thereby leaving with the settler the impression that the man is on the job with his eyes open. To promptly reach and control a fire the Forest Officer must know all of the secondary roads, trails, gulches, etc., and in case of a new man how is he going to learn these if we encourage him to use a car instead of a horse?

District 4 - Intermountain District

Man Mistaken for Elk and Shot: While hunting elk on the head of the Gros Ventre near the Teepee Creek Ranger Station November 16, Hugh M. Chase was shot and killed by Bob White of Casper, another hunter. Chase had just killed an elk and was dressing it when shot. White claims that he thought that Chase was an elk. During the past summer Chase was employed at the Upper Green River Company sawmill and at the time of his death was employed at the Wells Ranch. --Wyoming Wizzard.

More News from Palmer: A letter, dated October 31, from former Grazing Examiner Palmer, who is now making reindeer range investigations in Alaska for the U. S. Biological Survey, states in part--"--Have been extremely busy during the summer but at present becalmed due to weather conditions. We are now training our dogs mainly and preparing for winter travel which will begin about November 15. Have a team of 9 huskies which we purchased the middle of the month and we have been working them every day until now the natives comment that we have the best conditioned team in the village. (The village is Unalakleet).

"Have collected considerable data so far concerning reindeer grazing and during the summer also mapped and typed toward a carrying capacity study some 200 square miles of territory. Travel during the summer over the treacherous tundra is extremely difficult, but next spring we hope to be furnished with an ocean going power schooner in which we can cruise up and down the coast to reach the numerable points."

A Tough Family: Mr. P. S. Lovejoy in discussing cut-over lands of the Lake States in the "Country Gentleman" for December states: "The lumberman is the father of the cut-over lands; the mother is fire; the child is devastation. The father runs away; the mother is fast in the day time and goes out some at nights; the child is a pretty tough proposition."

Dog Tracks Lion to Tree: On December 7, W. J. Lowder, of Parowan, Utah, who is employed by the Biological Survey, terminated a three-day traveling hunt by killing a lion upon the Parowan-Paragonah Game Preserve. This lion measured eight feet six inches from tip to tip and had caused numerous casualties in the deer ranging in this vicinity. On December 3, Mr. Lowder placed poison baits upon the Game Preserve for extermination of predatory animals. Some two hours later he returned and found Mr. Lion's tracks. He then followed these for the following three days and finally with the assistance of his dog treed the lion.

It may be interesting to relate the circumstances of the final climax. Mr. Lowder was following his dog as closely as possible and saw him rush over a ledge about ten feet high. Immediately after Mr. Lowder reached the brink of this ledge, where there was a lone tree, the dog below apparently lost the trail. After very few seconds a rustling was heard overhead which proved to be Mr. Lion. Mr. Lowder states that he is convinced that a person's hair has considerable strength, as his raised his hat from off his head. He, however, left the vicinity of the tree in quite a hurry and immediately the lion jumped, but a well-aimed shot terminated his career.--Dixie Doings.

Fairview Gun Club Organized: Ranger Olsen reports that on the evening of December 11, a number of the Fairview sportsmen met and organized the Fairview Gun Club. The purpose of the organization is to aid in the protection and propagation of fish and game. Any member who violates the game laws will be suspended from the club and is liable to a club fine not to exceed $50.00.--Manti News Letter.

Boundary Notices Torn Down: On November 23, George L. Bennett of McGill paid $50 punitive damages for tearing down allotment boundary notices on the Schell Creek Division last August.--Nevada Nugget.

Luncheon for Service Men: At a meeting held in the office of the District Forester it was concluded to hold weekly luncheons at the Weber Club for all male members of the Service in this city. These lunches will be held on Monday of each week, which was the only practical day available, in one of the private dining rooms of the Club and the usual charge of 75¢ per plate will be made.

District 5 - California District

You Pay the Same on Scrubs and Pure-breds! During the season of 1919 three local livestock associations, the members of which use ranges on the Sierra National Forest in California adopted special rules providing for the purchase of pure-bred bulls, which made it obligatory upon all permittees to place on the range a sufficient number of pure-bred bulls. These were to be of Hereford, Shorthorn, or Aberdeen-Angus blood. The special rule also authorized the establishment of a committee to pass upon the credentials of each bull to be turned loose on the ranges. Not to make the burden too great the plan covered a three-year period--a part of the bulls to be placed in service each of the three years until the full number was secured.

Under this plan during the grazing season of 1920, no less than 105 Herefords, 97 Shorthorns, and 6 Aberdeen-Angus bulls were purchased by the stockmen through their associations, and placed upon the range, and it is estimated that by the end of the season of 1921 the stockmen in these three associations will have not less than 200 registered bulls on their ranges. This means, of course, a tremendous improvement in the grade of the steers turned out. Better blood--more weight, more meat; more meat, more money--for the permittees.--Will C. Barnes.

Exhibit Plans: A tentative plan for an exhibit for the 1921 season has been planned. The background will be 10 feet longer than that in the present year's layout, making the dimensions 10x30 feet. The painting will depict the destruction incident to a forest fire with its accompanying sense of desolation and contrast it sharply with a forest untouched by fire. A fire line separates the two phases and the features will be carried out into the foreground. Green trees, other vegetation and a doe and her two fawns will be placed on one side in the foreground, while burned snags, dead saplings, a deer or cow skull and skeleton, a turkey vulture and a couple of crows will add to the feeling of devastation in the burned area. Something of the effects of erosion following a fire could be shown in the painted middle distance.

Good Publicity: At a recent Community Institute, held at Bishop, Cal., Supervisor Jones spoke on "Our Big Backyard Playground, The Inyo National Forest" and District Ranger Simpson on "Grazing in the National Forest." This is but a sample of the educational and publicity work being done by the Inyo during the winter months;--a sample which might profitably be emulated by other Forests.

Some People get results if kindly encouraged, but give me the man who can do things in spite of H-ll."

Hunters' Fires and A Cure: When the establishment of a game refuge in San Bernardino mountains was suggested it was claimed by Forest Service officials that the establishment of such a refuge would greatly decrease the fire hazard on the watershed cover. Subsequent events have proven the truth of this assertion. The careful patroling of the lines of traffic as well as the establishment of the game refuge in the San Bernardino mountains has reduced the fire risk to a minimum.

R. H. Charlton, District Forest Inspector, is authority for the statement that "Only one fire was caused by hunters in this portion of the Angeles Forest during the past season."--Redlands, Cal. "Facts"

Three Weeks: Three strenuous weeks, lacking one day, are done, and our exhibit is now back in the store-room. One hundred and forty talks,--illustrated by the Air Service--Forest Service "set-up,"-- to 5600 of San Francisco's school children. And each kid, upon his return to school, writes a composition, after which the teachers conduct a classroom discussion.

During January and February we expect to exhibit and lecture to the school children of Oakland, Alameda and Berkeley.

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"Spare That Tree"

At the foot of a sharp rise on a hillside street in a New England town, tacked upon the trunk of a large elm growing beside a driveway are the following lines, apparently written by a youthful hand:

O Truckman, Spare this Tree
Have a Heart and-Don't Butt Me.
The Street is Narrow and the World is Wide--
Try to Back on the Other Side.

District 6 - North Pacific District

Forest Policy for Oregon: The Oregon State Board of Forestry is in process of adopting a comprehensive State forest policy as means of outlining what the Federal Government, and the State in cooperation with the Federal Government, and the State itself should undertake in the line of forest protection and perpetuation. The Board at several meetings has had such a policy under consideration and it is now practically in final form for adoption. A meeting was held in the District Office on December 4. The seven members of the Board are: Governor Olcott; Dean George W. Peavy, O.A.C.; R. M. Fox, of the Oregon Forest Fire Association; George Gerlinger, of the Willamette Valley and West Coast Lumbermen's Associations; W. Spence, Master of the Oregon State Grange; Dan P. Smythe, Oregon Wool Growers; and George H. Cecil, Forest Service. At this meeting the following men also met with the Board; E. S. Collins, of the Columbia River Loggers' Association; A. W. Cooper, Secretary, Western Pine Manufacturers' Association; E. T. Allen and C. S. Chapman, Western Forestry and Conservation Association. These men assisted in framing the proposed policy, as also did State Forester F. A. Elliott.

Study of Logged Lands: Dr. Hofmann, in charge of the Wind River Experiment Station, returned on November 9 from a five-weeks' trip through Douglas fir regions of western Washington and western Oregon. The object of his trip was the examination of logged areas in the Douglas fir type with especial reference to the condition of the natural reproduction on such areas. He examined logged-off fir areas in the Puget Sound region on the Washington, Snoqualmie, and Olympic Forests, also areas south of Tacoma and some in the vicinity of Astoria. From what he found on the ground he has verified the conclusions reached from his study of the time of year and frequency of slash burning on subsequent reproduction of Douglas fir. This study has been in progress for some years and Dr. Hofmann is now ready to give out the results of the investigation, which results are believed will be of the greatest interest and value to lumbermen in the Pacific Northwest as well as to foresters.

Livestock Associations: On the Whitman there are 19 community cattle and horse ranges, 14 of which are organized and cooperate more or less with the Service in range management plans. Of the 26,160 head grazed under paid permit, 21,936 were handled through these associations. The total number of permittees on the organized ranges was 309; on the unorganized ranges, 38. This means that from the standpoint of membership, the Whitman is over 90% organized. Three of the unorganized ranges are small units with a combined authorization of but 1100 head. On the Middle John Day and Sullen ranges, however, organization work would be justified, and it is hoped that this may be accomplished in the not far distant future.

Sheep in Alaska: Mr. McIntosh, an old time permittee on the Ochoco Forest, recently called at the grazing office and gave some interesting information in regard to his experience in running sheep on some of the ranges of the Aleutian Islands, Alaska. About three years ago he purchased a small band of Willamette Valley sheep and took them to the Alaskan range. The range, he states, is benefited by a year-long mild climate, an abundance of native grasses and other forage plants. The sheep did exceptionally well, but due to the fact that they were purchased from a vicinity near the coast in Oregon they were badly infested with liver flukes which resulted in serious losses during the past three years. Mr. McIntosh has been in the sheep business for the past thirty years in central Oregon and is convinced vthat the Alaskan grazing proposition is a very good one and that the vicinity where he now has his sheep is capable of supporting at least 200,000 head of sheep. He intends to purchase a band of western Oregon sheep so as to prevent the recurrence of liver fluke trouble and take them to the Alaskan country with the intention of finally building up an enormous sheep business. He states that at present the Alaskan proposition is not a mutton producing possibility, but that the wool produced is of exceptional quality and quantity due to the mild climate and lack of weed seeds and dust which are common in the Territorial wool. Later, when he develops several large herds he expects to develop a mutton business, since he will have sufficient stock at that time to ship either the live or dressed stock in large quantities.

Land Exchanges in Oregon: The following figures have been compiled on the accomplishments in actual exchanges of land in Oregon up to the present time: Eleven exchanges have been completed in this Department and patent has issued on seven of them. These exchanges are four on the Ochoco, five on the Oregon and two on the Paulina area of the Deschutes. In these eleven exchanges 44,332 acres have been relinquished by the applicants in lieu of 40,283 acres in the selections. The appraised value of the lands relinquished is nearly $511,000.00. On an average it has taken thirteen months for the applicant to obtain patent after the Department has approved the exchange. This period varies from three months in one case to over two years in another. In cases where the abstracts of title turned into the Government are satisfactory patent is obtained in a few months. Altogether the District has nearly thirty cases on Forests which have Land Exchange Acts. Some of these cases are still open. Five offers by applicants have been finally rejected and the cases closed.--C.J.B.

Wenaha No More: By the Executive Order signed by the President on November 6, the Wenaha and the Umatilla Forests are combined under the name of Umatilla, with headquarters at Pendleton, Oregon. John C. Kuhns continues as supervisor. The new unit contains a gross area of 1,348,770 acres. The name Umatilla is the name of the tribe of Indians, and it may be of interest to note that it means "wind-blown sands."

Inter-Bureau Meeting: On Wednesday, December 1, various local heads and representatives of Department of Agriculture Bureaus met in Portland at an informal luncheon to get acquainted with one another and one another's work. There were present:--

W. L. Staley, Assistant to the Solicitor.
E. C. Joss, Bureau of Animal Industry.
C. H. Purcell, District Engineer, Bureau of Roads.
Geo. H. Cecil, District Forester.
E. N. Gates, Bureau of Markets.
R. L. Baldwin, Bureau of Markets.
V. P. Fawcett, Bureau of Markets.
J. A. Le Roy, Bureau of Markets.
A. F. Nelson, Bureau of Markets.

Mr. Purcell was the speaker for the occasion and explained in a fifteen-minutes' talk the purposes and activities of the Bureau of Roads. These meetings will be held regularly on the first Wednesday of each month. Similar procedure is being followed at other District Headquarters of the Forest Service.

Fires and Insects: Fires of even minor severity in yellow pine are apt to bring about large increases in insect attacks. This was found to be the case in southern Oregon after careful study by the Bureau of Entomology. Observations on yellow pine burns in California and British Columbia show this same increased activity of bark beetles subsequent to even light fires.

Field work on the Whitman in November indicates that what is true of fire-scorched yellow pine in southern Oregon, California and British Columbia is equally true of the yellow pine forests of the Blue Mountains.

The attacks by the western pine beetle which follow fires are largely concentrated in slightly scorched trees which would otherwise recover. Fortunately these heavy losses continue for only a year or two at the most. The beetles seem to be able to easily kill the trees they attack but often they do not breed successfully in the scorched trees. This accounts for the rapid decline in the insect losses after the initial attack. Areas burned before the middle of August are much more susceptible to these increased depredations than burns which occur after that time. When you talk about light burning think of the above.--A.J.J.

Fire Prevention and State Licenses: Through the efforts of State Forester Elliott the Oregon hunting and fishing licenses are carrying the following on the back of the cards:

District 6 - North Pacific District (Continued)

ATTENTION, MR. SPORTSMAN! State and Federal forest protective organizations solicit your earnest cooperation and care with fire while in the forests. Your assistance is vital. Help keep our timber green!

IT IS UNLAWFUL. To build a camp fire against a tree, stump, or log:

To build a camp fire without clearing the ground immediately around it free from material which will carry fire:

To leave a camp fire burning and unattended:

To allow a camp fire to spread:

To set on fire, or cause to be set on fire, any woods, brush, grain, stubble, or other material, where fire is liable to spread and damage property, without first securing a written permit from a State Fire Warden.

BE SURE YOUR FIRE IS ENTIRELY OUT BEFORE YOU LEAVE IT!

IF YOU SEE A FIRE YOU CAN'T PUT OUT, NOTIFY THE NEAREST FIRE WARDEN, OR
F. A. ELLIOTT, State Forester.

Mr. Elliott will try to get some fire prevention slogans printed on the Oregon motor vehicle operators' licenses when new forms are printed.

Ranger's Reading Course. It's coming! The Supervisors' Advisory Committee has drawn up a Reading Course, to be started at once. The course is based on the Manual, the Fire Fighters' Manual and Bulletin #760--"Range Management on the National Forests." The questions are not in the sense of an examination test but rather as problems to be solved from a study of available instructions found in the Manuals and the grazing bulletin. It is estimated that the questions cover a 10-weeks' course, with a total of 80 questions. It's a good guess that there's going to be a search for Missing Amendments to the Manual in a few weeks. Full instructions and the questions will be issued very shortly on the Course. In the meantime dust off the old Manual!

Supervisors' Advisory Committee: In order to correlate better the field and the District Office the District Forester has appointed a Committee of Supervisors to act in an advisory capacity on matters of importance in the District. This Committee is composed of Supervisors Brundage, Sylvester and Evans. The Committee held its first meeting in Portland the first week in December and considered among other things, a Manual Review Course for forest officers, a Supervisors' Meeting this winter, Ranger Meetings. Notice of final action on these recommendations will be sent out shortly.

District 7 - Eastern District

Addition to Florida: Copies of the second Proclamation, Florida National Forest, have just been issued. By this Proclamation a gross area of 41,381 acres have been added to the Ocala Division of the Florida Forest. Of this total 9,958 acres, or 24%, are vacant public lands. An additional 1200 acres are embraced in homestead entries which are yet pending. It is expected that the net increase to the Forest will approximate 10,500 acres. This area is in all ways similar to lands originally set aside as National Forest, and while it is intermingled with privately owned lands, its administration will be practicable and the possibilities of extending the benefits of the Forest will be measurably increased. Plans have all been made to place the area under fire protection, which is the one important activity of the Ocala Division of the Forest.--
L. L. Bishop.

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My Error: The Editor apologizes to District 5 for crediting some of its news items to D-4 in the Christmas "Bulletin." With the large number of loose sheets handled in an issue, it is not always possible to get everything straight.

SERVICE BULLETIN

U. S. Forest Service

Washington, D. C. - January 10 & 17, 1921.

(Not for Publication)

"COME CLEAN"

The New Year is just breaking--the time for good resolutions; for turning over a new leaf. The holiday season, with all its joys, is past, and it is now time for everyone to take stock and see if he is "coming clean"--with himself and with the world.

How do you "face up" with the world and with yourself? Are you "on the level"--Satisfied? Surely not, if you have balanced the books for 1920. You have done a lot of things you are proud of, and have been the better for it. But then there are those things you should have done, or did wrong--which are chalked up against you and add to your dissatisfaction.

But this world has been out of whack for the last few years, so perhaps it isn't all your fault. Let's clean off the slate and start anew, with a sincere determination to make a better job of living this year.

It isn't going to be easy "sledding"--don't fool yourself on thatbscore for a minute. You're going to have pretty much the same troubles and trials as in 1920--and there will be new problems to solve; temptations to meet, and a good many of the old lessons to relearn. Are you getting ready to go to it as you know you should?

How about that impatience of yours; that dissatisfaction with your job; that failure to always live up to orders, and all the rest of the things with which you have to wrestle? If you have made up your mind to put a curb on these, then the new year already holds a vast sum of happiness for you and yours.

And the other fellow--you know who he is; his name is Everybody. Are you going to listen to him and weigh his advice and opinions; whether on matters little or big; whether in work or play? Are you going to be "square" with him, and at the same time with yourself?

Those good resolutions--never mind about them--but, honestly, have you made up your mind to play the game like a regular fellow, a he-sized Forest officer? Are you going to get busy and render a full day's service every twenty-four hours to your country, to your family, and above all to yourself? Are you going to "come clean" with your fellow man?

If you have so resolved, and if you possess the stick-to-it-ativeness to see the game through to the end, then 1921 is going to be a wonderful year for you.--W. H.

Progress Toward a National Forestry Policy

By Col. W. B. Greeley

The very rapid development of support for a national forestry policy indicates how thoroughly the need for doing something is appreciated by Americans as a whole and how ready the country is to stride forward. The movement is rolling on with the increased size and momentum of a huge snowball. While partly an old story, it is of interest to summarize what has happened.

Following the earlier work of Col. Graves and W. L. Hall, in the form of publications, addresses, and meetings, a brief summary of the campaign to date was issued by Col. Graves last February entitled "The Next Steps in a National Forestry Policy." This contained the essential points in both Federal and State forestry legislation. In April appeared a report of the Forestry Committee of the National Pulp and Paper Association, approved by the Association, which recommended Federal legislation almost exactly in line, point for point, with Col. Graves' "Next Steps." On June 1 the Forest Service report in response to the Capper Resolution was handed to the United States Senate. It contained, in addition to the discussion of timber depletion and related matters, a fairly specific program of both Federal and State forestry legislation, corresponding closely to that advocated by Col. Graves four months earlier.

As far back as October, 1919, the Western Forestry and Conservation Association had endorsed the main outlines of Col. Graves' plan. This Association had an active influence in the position taken by the National Lumber Manufacturers' Association which, early in July, 1920, through its Forestry Committee, endorsed the substance of the Forest Service program. Later in July was held a Reforestation Conference at Madison, in connection with the Decennial celebration of the Laboratory, at which steps were taken to organize the enormous and varied wood-using industries of the country, from barrels to railroad ties, in a super-association for the purpose of working actively in behalf of a National Forest policy and of better conservation of wood throughout its various stages of manufacture.

On October 15 a meeting was held at New York City to discuss the specific terms of a bill which would put into effect the main points in Federal legislation advocated in these various conferences and endorsements. The meeting was attended by representatives of the National Lumber and Paper Manufacturers' Associations, the American Newspaper Publishers Association, the American Forestry Association, the Association of Wood-using Industries, and the National Wholesale Lumber Dealers Association, as active participants, while the Forest Service and the United States Chamber of Commerce sat in an an advisory capacity. This meeting unanimously approved a Federal forestry bill which was simply the legislative embodiment of the ideas set forth previously in the two publications of the Forest Service and in the report of the American Pulp and Paper Association.

On December 20 this bill was introduced in the House of Representatives by Representative Snell of New York. By that date it had been formally endorsed by all of the associations represented in the October meeting at New York City; and a "National Forestry Program Committee" had been formed and financed by them to work actively for the adoption of this measure.

In the meantime, two of the most important planks in the Snell bill had been submitted to Congress separately as supplemental appropriation estimates originating with the Secretary of Agriculture and the National Forest Reservation Commission. The first was a request for one million dollars to carry on the cooperation with States, proposed by the Snell bill in fire prevention and other phases of forestry; the second was a report from the National Forest Reservation Commission recommending an appropriation of ten million dollars for the ensuing fiscal year to continue National Forest purchases under the Weeks Act.

Hearings on both of these supplemental estimates were held by the Agricultural sub-committee of the Committee on Appropriations January 7, at which most of the outside groups interested in forestry legislation were represented. Hearings on the Snell bill as a whole will be held by the Committee on Agriculture January 26, unless something unforeseen prevents. It is, however, unlikely that much, if any, progress in actual legislation along the lines advocated, except in the fire and acquisition items, will be made during the present short session of Congress, particularly in view of the general necessity for economy in public expenditures. But the process of education necessary to effect important legislation of this sort is going steadily on.

The most important proposals of the Snell bill are:

(1) Federal cooperation with the States on a large financial scale in fire prevention and reforestation, subject to the adoption by the States of such essential requirements as the Secretary of Agriculture determines to be necessary. This cooperation is not to be limited to the watersheds of navigable streams.

(2) An intensive survey of the forest resources, rate of growth, and timber requirements of the country.

(3) Purchases of National Forests, not limited to the headwaters of navigable streams, on the basis of 10 million dollars annually.

(4) General authority to the Secretary of Agriculture to acquire timberlands by exchange for National Forest lands, stumpage, or timber certificates.

(5) The ultimate inclusion in the National Forests of all lands now under government ownership or control chiefly valuable for timber production or watershed protection, through a process of classification and Executive Orders, in which the National Forest Reservation Commission will take an important part.

These provisions include unsurveyed public lands and timber or watershed lands in Indian Reservations (subject to liquidation of tribal rights) and in all other reservations except National Parks.

(6) Liberal appropriations for research in forest products and reforestation and for planting denuded lands within the National Forests.

Meanwhile the country has had before it another forestry bill introduced by Senator Capper last May, which embodies the plan of Federal control of privately owned forest lands advocated by Mr. Pinchot and approved by a majority of the ballots cast by the Society of American Foresters last spring. Mr. Pinchot has informed us that a new bill will be ready shortly, revising the Capper bill in some particulars but retaining its essential principle of Federal control of private forest lands. Mr. Pinchot concurs in the main features of the Snell bill, with the excpption of the section which recognizes the States as the agencies which should pass laws regulating the use of privately owned forest lands. Mr. Pinchot advocates liberal Federal cooperation with the States in aid of fire prevention, under State authority, but would eliminate any reference in the Snell bill or in the appropriation proposed by the Secretary of Agriculture to State regulation of methods of cutting, or any recognition of State authority or control in this field. This whole phase of the question Mr. Pinchot would leave open to direct Federal control under supplemental legislation such as the Capper bill or a new bill along similar lines.

The Forest Service owes so much to Gifford Pinchot and its members justly hold him in such high esteem that I want them to understand this situation exactly. There is no man in the Service who has a greater admiration for "G.P." than the individual who is now trying to fill his shoes. And Mr. Pinchot holds the interest and welfare of the Forest Service just as much at heart as he ever did. We are both seeking the same objects. The difference is as to the method of reaching them.

I believe that the national government should do everything that it can to promote reforestation. I do not object on grounds of principle to national control of private forest lands and I will not oppose any measures which may be brought before the country through Mr. Pinchot's effort seeking such control, but I don't believe the method will work. The question with me is one of expediency, of the most practicable and rapid way to get results as measured by acres of growing forests on the lands now cut or being cut.

Whether we get at privately owned forest land through national control or State control, we are putting it in the class of public utilities. We are putting restrictions upon its use in the public interest. We must recognize the equities of the owner of the land that is thus classed as a public utility; and we must put around that land the conditions which will render the discharge of its public obligations commercially practicable. In other words, side by side with regulations seeking to bring about reforestation, there must be equitable adjustments in forest taxes and effective control of fire hazards.

It is difficult for me to see how authority to regulate forest land can be separated from the police powers of the State to protect it from fire and the taxing powers of the State which must be brought into play if regulation is to be equitable and hence is to stand. Furthermore, aside from constitutional questions, it is difficult for me to see how an overlapping Federal control would avoid serious conflict with authority in the same field which the States undoubtedly have and can exercise if they choose.

I believe in the principles of the Snell bill, not because I am satisfied that they represent the last word in our national forestry policy, but because I see in them practical roads to progress which the country is prepared to take now and which in the aggregate will take us a long way. I see no reason why these steps should not be taken now as the immediate and expedient thing, whether they prove to be ultimately sufficient or not. I see no reason why the several States should not be encouraged to go just as far as they will in the reforestation of private lands, or why any State that brings to pass substantial reforestation under its own laws and administrative organization should not be permitted to continue to handle the forests within its own borders even after legislation authorizing Federal control might be obtained. If Federal control of private forest lands can be gotten by our courts and worked out practicably in reference to local taxation and the police functions which control fire hazards, well and good. But anything accomplished meanwhile will be that much ground gained. We will be ahead to the extent of the fire protection organizations built up of the local interest and initiative which have been brought into play, though only a small number of States should adopt and enforce the regulatory measures needed. Then let Federal control come, if it can, as the last stone in the arch, as the means of securing reforestation in States which are unwilling or unable to act for themselves.

It is, of course, a matter of regret to me that there should be any division between the Forest Service and our former illustrious leader in this matter. But whatever the last word in our national forestry may be, I can see no reason why all should not accept the opportunity for immediate progress which the pending legislation offers and accomplish all that we can under it.

Our Vanishing Elk

By Ernest W. Shaw

Absaroka Forest officers are alarmed at the lack of elk in evidence on the fall rutting grounds in the northern part of the Yellowstone Park this season. No one can even hazard a guess as to the number of elk at present in the Yellowstone section of the Northern Herd; but that the number is alarmingly small is indicated by the lack of elk along the Lamar River, and the lower reaches of Slough Creek, Buffalo Fork and Hellroaring streams.

For the past many years, regardless of climatic conditions, fully 60 per cent of the Yellowstone band appear regularly in the open country above mentioned during the latter days of September or early in October and remain there throughout the rutting season. After that period, the old matured bulls leave the rolling open country and work back, often into deep snow, to the higher country both in the Park and the adjoining National Forest. The cows with their last summer calves still at side, remain on that fall range until joined by the big drift from the head of the upper Yellowstone, when they all gradually work down toward the town of Gardiner, where in past winters some have been fed tame hay. Others drift out of the Park onto the winter range, where they have been given close protection from tooth and meat hunters by Forest officers, until spring opens and they drift back to the Park.

This season, on the divide between Slough Creek and Buffalo, where usually there are from one to three thousand head gathered by mid-October, a rather careful ride over that country revealed the tracks of only 5 or 6 head on the otherwise unbroken snow.

The valley of Slough Creek was likewise empty. Not an elk in sight where formerly one could see them slipping into the timber in all directions.

The great slope and hillside to the east of the mouth of Hellroaring, where in the spring of 1917 were counted 2,500 head, in one band, and where on most falls the grazing elk look much like great bands of domestic stock--not an elk was in sight--nor had they been there.

In Cottonwood Basin, one of the choice late fall ranges for elk to stop and rest in on their way down the river during the fall drift, has remained empty this year.

On Blacktail, from Mt. Everts to Tower Falls Station, there were possibly 75 head where there should have been that many hundred.

What is the answer? Who knows?

Some of the wise ones of this country inform us with great confidence that the open fall and winter thus far has caused the elk to remain back in the higher, more inexcessible portions of the Park. Park Supt. H. M. Albright, after a 300-mile trip, during which he swung pretty much over all the fall elk range, despairs of answering the question. There were none on Big Game Ridge, nor were there many on the head of the Snake River, where they usually congregate prior to the drift toward Jackson Hole. He states that he saw less than 1,000 head of elk--perhaps 500 head. Of one thing there can be no question,--the elk of the northern herd are not in sight on the ranges formerly occupied by them at this time of year.

Open falls in the past did not cause the elk to abandon their usual custom or habits during the rut. Why then, should that be given at this time as a basis for belief that the usual thousands are yet back in the hill country.

It is too soon to attempt an estimate of the actual numbers now comprising the Yellowstone band, but it is not too soon to bring home to the American people and the sportsmen who have the true interests of the game at heart, the terrible fact that the shrinkage in this band during the past five years has been alarming and that the shrink during the last year has been nothing less than appalling.

Every present indication limits all conservative estimates by those in close touch with the situation to less--much less than 5,000 head. When it is considered that their numbers in 1914 were about 25,000 and in 1917 were counted out 17,500 you can begin to understand what the situation spells for the future of the Yellowstone band unless immediate and drastic action is taken, and even then it may be too late.

Past experience with the disappearance of big game in large bands proves beyond question of doubt that when those bands sustain the shrinkage which has occurred in our elk bands that they are almost beyond the hope of saving.

The most important big game problem before the American sportsmen today is:

"What are we going to do to save our last great herd of elk--
Not next year or next month, but right now?"

(Later): Special news item over recently installed Service Press Wire: "Supervisor reports 3,300 head killed from Yellowstone band in 1919. 6 head killed in 1920 during open season."

Insect Studies by Airplane

A most interesting experiment in the use of aircraft for forest investigations in northern Ontario, Canada, is described by Roland D. Craig, F. E., Commissioner of Conservation, in the November issue of "Canadian Forestry."

"The Air Board furnished a sea-plane and crew for the joint use of the Commission of Conservation and the Entomological Branch of the Department of Agriculture for the purpose of mapping in the forest areas and also to study the progress of the spruce budworm infestation which is spreading throughout the northern pulpwood forests.

"The machine used was a Curtiss flying boat, officially known as the H. C. 2-L type. It has a wing-spread of 78 feet and is equipped with a 360 h.p. liberty naval type motor. In addition to the pilot, the boat will carry two observers.

"This is believed to be the first instance in which aircraft has been used in insect studies and the results have proved most satisfactory. In a few hours flying over the region between Kipewa Lake and Larder Lake, the limits of the budworm infestation and the extent of the damage was determined by noting the discoloration of the affected balsam and spruce trees. This pest has already destroyed millions of dollars worth of balsam and spruce in Quebec and New Brunswick, but it has just made its appearance in Ontario. It is of the utmost importance to the timber owners and the Government to find out quickly the areas affected and the direction in which the infestation is spreading in order that the pulpwood may be utilized before it is rendered uesless, which usually occurs within two years after the trees are defoliated. In addition to the aerial observations, a thorough investigation of the infestation is being conducted on the ground in the areas shown to be attacked."

American Society of Landscape Architects

The following resolutions on the work of the Forest Service were adopted by the American Society of Landscape Architects on December 15, 1920:

WHEREAS, the proper fitting of certain areas in the National Forests primarily for recreational use and the maintenance of these areas for such use calls primarily for the expert knowledge, training, and experience of the landscape architect as such rather than those of the forester as such or the engineer as such;

WHEREAS, the American Society of Landscape Architects understands that it is now the established policy of the Forest Service in recognition of this fact to require that those of its officials who are charged with the administration of such areas and are known as recreation engineers shall have been trained as landscape architects;

WHEREAS, this Society further understands that the present Civil Service Examination for the position of Recreation Engineer in the Forest Service is based on this requirement; and

WHEREAS, the Forest Service for its first Recreation Engineer has through this means secured a man who, by his training, appears to be admirably suited to the work for which he has been appointed; it is

RESOLVED, that the American Society of Landscape Architects desires to extend its congratulations to the Forest Service and cordial endorsement and appreciation of that Service's wise and far-seeing action in this matter.

RESOLVED, that it is the hope of this Society that this policy already established will be steadily and persistently maintained and applied to all those areas under the administration of the Forest Service which are or shall be appropriately set aside to serve dominantly recreational and aesthetic, rather than economic, functions; and

RESOLVED, that this Society will be glad to be of any aid it may in cooperation with the Forest Service toward maintaining and rendering effective the above policy.

"Ain't Men Just Grand!"

by Fred Morrell

Whoever wrote that "Parable in One Canto" in the Bulletin of December 6, said a mouthful. The writer speaks with the assurance of a confident authority. I have been playing one or the other parts of that little drama for "going on fifteen years," and I ought to know. Many and many a time have we put it on in the old Majestic Building, and later in the "New Federal Theatre" in Denver--fine actors all of us, but with Yours Truly getting away with a large share of the honors. Many an hour, with pipes aglow and feet high, 'phone ringing and "actors" coming and going, have we discussed fore and aft, crosswise and through the middle, and around to the aft again; separately, alternately, and collectively, problems all the way from the enabling act to Carhart's last pet scheme for jazzing up the tired business man who does things and people, and who has come out to "his playground" for a spell, being "all worn out, don't you know" from directing the work of remarking his goods in a vain effort to keep up with advancing prices.

And then, round about four P. M., when we had done the best we can with it now, Mr. No. 1 hurries out, dictates sketchily the conclusion, indicates data that should be checked up and included, asks the office clerk to polish it off and "Get it out tonight because it is rush stuff," and, being high up on the efficiency register, and of a charitable disposition, our "Miss Tappit" gets it out and pretends not to think that it should have been given to her sooner.

Out "on the road" too, doing the "one night stand stuff" at Sheridan and Leadville and Glenwood Springs, and all the other burghs, with the Supervisor and the Deputy and the Forest Examiner--all in the cast. And the forest clerk who served, you might say, as scene shifter and property man getting the dope from the files, setting us right as to instructions, names, dates, etc., and pounding desperately away on his Underwood between whiles getting out, perchance, the "Annual Report" which is still the pride and bulwark of the Branch of Grazing--due Monday, but which Mr. Supervisor had gotten to him only yesterday, having had to rush it so as to be ready for our coming. Of course, being rushed, Mr. Supervisor had not been able to put it in the best of shape, but the said "property man" would get it done, show the supervisor where to sign, and take it to the train himself after supper so the Forest would be saved the black mark of a tardy report.

Have to discuss things? Sure! That's the way we get each other's ideas. Right again! But if words came by measured service like electric lights and gas, how much fewer we could do with! How about a motto like this to guide us in conferences:

"Know what you want to say, then say it;
Stay while you need to stay, then beat it."

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A Ranger Station is like a girl. It's wonderful what a little fixin' up will do.

No Conflict Between Sheep and Scenery

By Dr. Frank A. Waugh

In connection with the discussion regarding the conflict between grazing and recreation I would like to go on record as saying that, by and large, such a conflict simply does not exist. The theory that the recreation use of the forests requires the complete elimination of other utilities, especially grazing and timber cutting, is false and mischievous. I am aware that it is widely entertained both in and out of the Forest Service, and I would like to do my little part to put this matter right.

Attention may be called to the fact that in many of the most highly used city parks sheep are kept regularly for two purposes; first, to keep down the lawns, and second, to add interest and beauty to the landscape for the benefit of visitors. The idea that sheep or cattle are going to interfere with any one's legitimate enjoyment of the forests is really preposterous.

The old maxim "woodman spare that tree" certainly is not a principle of forestry, but on this idea a lot of false sentiment has been founded. The fact is that for purposes of recreation and scenic beauty we want to preserve the forests as forests and not in the character of anybody's front lawn.

I could readily go further to amplify and emphasize this idea, but I am saving that up for a time and an audience where it is more needed.

Appraisal of National Forest Ranges

By Col. W. B. Greeley

Congress seems disposed to leave the question of grazing fees, which was one of the burning issues in the appropriation debates last year, in the hands of the Forest Service and the Secretary of Agriculture. This has come about in part from the failure last year to obtain legislation directing an immediate increase in range charges and in part from the financial slump which has caught the livestock industries of the West. We can count with certainty, then, upon carrying out the plan of dealing with the whole grazing fee question which was set forth in the Forester's report this year and reiterated and approved in the report made to Congress by Secretary Meredith. This plan is (1) to make no change in grazing fees during the ensuing three seasons, as a matter of good faith to the stockmen under the five-year permits issued in 1919; (2) meantime to classify the National Forest ranges by grazing districts or other practicable units on the basis of their commercial value considering the accessibility of the range, its quantity and quality, costs and losses in handling stock, and other factors which affect its actual worth to the user; and (3) to revise the grazing fees in accordance with this classification, range by range, establish a new schedule of charges after the proposed fees have been thoroughly discussed with the livestock associations, and put them into effect in the season of 1924.

In other words, the Forest Service will definitely get away from the flat charge basis in its grazing business. We will charge for the forage as we charge for the timber on the National Forests, in accordance with its quality and accessibility and the other factors which enter into the practical value of a particular range, like a particular body of timber. And, as in appraising our timber, we will make allowance for the costs imposed upon the Forest user by Service regulations and requirements.

We are not going to attempt too much detail in this range classification and appraisal; and we are not going to stray off from practical grounds into theory. The main point is that we are going to charge for the National Forest ranges what they are actually worth, on a fair and reasonable basis, to the permittees who use them; and in getting at what this fair and reasonable charge should be, we are going to take into account the factors which make one range actually worth more or less than another range.

To Mr. C. E. Rachford, who has been advanced to an Inspectorship in the Branch of Grazing at Washington, has been given the job of directing the classification and the subsequent appraisal of our National Forest ranges. We have three years in which to do it, but it is a big job representing a very important development in the business management of the National Forests and it must be done right.

In the nature of things our charges for grazing permits must be readjusted from time to time, probably at intervals of five years or thereabouts. Neither the first appraisal to be made for the season of 1924 nor subsequent readjustments can be made soundly and fairly unless our brass-tack information about the ranges is complete. In the first place we must satisfy ourselves what a fair value of each range is, and in the second place we must be prepared to convince the livestock associations and the individual permittees that we are right. During the next three years we want to obtain a set of appraisal reports and maps that will accomplish for our grazing business what the land classification reports and maps have accomplished for the land use of the National Forests,--a permanent and authoritative record which we can turn to again and again, not only now but years hereafter, as a basis for conducting this particular class of business.

I would like to have every Supervisor and Ranger who works on the range appraisals appreciate the importance and the permanence of the job which he has in hand, and give the District Foresters and Mr. Rachford, who represents Mr. Barnes and the Forester, their best support in obtaining range appraisals that will accomplish the big business objects we are seeking. We have very largely won the confidence of the livestock interests of the West because our methods and ideas were sound and because our application of them has been fair. We must hold their confidence in this new development of the grazing business by following exactly that same rule.

Forest Educators Meet

By S. T. Dana

One of the subjects causing the most discussion at the Second National Conference on Education in Forestry which met at New Haven in December was the length of time necessary for the preparation of a thoroughly trained professional forester, irrespective of the particular field of forestry in which he might later specialize. The eastern men were almost unanimous in feeling that five years of collegiate work are practically essential for adequately trained men, although they recognized that not all prospective foresters can be induced to spend five years in preparing themselves for their work and that it is, therefore, necessary to formulate courses which will crowd as many as possible of the more fundamental subjects into four years. The foresters from the West Coast, on the other hand, who were prevented by distance from being at the conference and therefore had to express their views by letter, emphasized their belief that four years is ample time for the preparation of fully trained technical men. The western men apparently base their belief largely on the feeling that if four years is sufficient for the training of engineers, it should be sufficient for foresters, and that if attractive openings are available for men at the end of four years it is only the poorer men who will be willing to stay for an additional year of collegiate work. If the western men could have been present at the conference in person a lively discussion would doubtless have been precipitated. As it was there was the greatest harmony among those actually present, many of whom went beyond even the five-year limit and advocated as the ideal preparation for a forester a four-year course in the liberal arts followed by professional training.

Another point of much interest brought out by the conference was the constantly broadening scope of the field of forestry. It is quite clear that there is a decided tendency away from the view that silviculture and forest management are practically the whole of forestry. Most of the schools are still inclined to stick rather closely to the standardized curriculum of the last 20 years for the training of "general" or "regular" foresters, but at the same time are showing a disposition to welcome "special" and "irregular" foresters into the fold. We are, for example, already quite used to the idea of regarding logging engineers as a part of the profession and will undoubtedly in the near future expand its scope to include specialists in other fields such as forest products, forest entomology, forest pathology, forest zoology, city forestry, forest recreation, etc. That the forest schools must so adapt their courses as to train men for these and similar fields was brought out at the conference and the desirability of arranging special courses for men planning to go into forest products work was strongly emphasized. In other words, there was evident a growing tendency on the part of the forestry profession to recognize as foresters not only those engaged in the production of the forest crop, but also men with adequate professional training engaged in its harvesting and utilization.

Forest Educators Meet (Cont.)

Some of the other points discussed at the meeting included the desirability of having forestry more generally taught in the high schools and colleges of the country; the need for a marked expansion of vocational training in forestry for such positions as rangers and guards; the development of extension work with timber land owners and wood users, and the prosecution of forest research as a regular part of the work of the forest schools of the country. Throughout the discussions the public service aspect of forestry was constantly mentioned and the need for imparting the public service point of view to the prospective forester emphasized.

Taken as a whole, the conference covered a comprehensive field in a constructive manner and should do much to guide and strengthen educational work in forestry throughout the country.

A Tree Gives Thanks

Dear Lord, thou knowest I am but a tree,
Crippled and old; perhaps 'tis not for me
To offer thanks in this unpolished way,
But if it be presumptuous, I pray
Thou wilt forgive me, knowing all my years
Were nourished by Thy smile and Heaven's tears;
Since those of us who live beyond the span
Of trifling seasons here vouchsafed to man
Have deeper wells of gratitude and lift
Our brimming hearts to Thee, an earnest gift.
I thank Thee, Lord, that I have held the snow
High in my arms that all the world might know
How perfect are the blossoms Winter breathes
To compensate our loneliness for leaves;
I thank Thee, too, for all the piping tunes
That thrilled their silver way through golden moons,
And wove a chatelaine of beaded notes
To hold the memory of feather throats;
I thank Thee that so many children played
Beneath my crooked branches, that they laid
Their cheeks like satin petals 'gainst my bark,
To whisper little secrets in the dark.
I thank Thee, too, that stars can be so bright
That angels on their errands through the night
May pause to rest their pinions on the spheres
That gleam like stepping-stones across the years.
And so for dawn and dusk, for heat and sun,
For wind and rain I thank Thee, Lord, each one
Peculiar benediction lays on me,
And last I thank Thee, Lord, that I'm a tree!

--Martha Banning Thomas, in New York Sun.

New Legislation in Congress

Experiment Stations: On December 23, Senator McNary (Oregon) introduced a bill for the establishment of a Forest Experiment Station at some suitable place in Oregon or Washington. An appropriation of $50,000 is asked.

On January 4, Senator Ashurst (Arizona) introduced a bill (S.4776) for the establishment and maintenance of a Forest Experiment Station in Arizona. The bill carried an appropriation of $30,000.

National Holiday: Senator Penrose (Pennsylvania) introduced a bill on January 3 making Armistice Day a National holiday.

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One spare time job maybe you hadn't thought of: Write a news story for the Bulletin.

New National Forests: On December 31, 1920, the President signed two Executive Orders consolidating the lands formerly within the Wenatchee, Chelan and Okanogan National Forests into two National Forests, hereafter to be known as the Wenatchee National Forest and the Chelan National Forest. The order is effective July 1, 1921.

By the terms of these orders the Entiat River drainage, which hitherto formed a part of the Chelan National Forest, becomes a part of the Wenatchee National Forest. The headquarters of the new Wenatchee National Forest will remain at Wenatchee, Washington. To what remains of the Chelan National Forest will be added all areas formerly within the boundaries of the Okanogan National Forest, to be hereafter known as the Chelan National Forest. The headquarters of the new Chelan National Forest will remain at Okanogan, Washington.

Economy: Chairman Good of the Committee on Appropriations in presenting the Sundry Civil Bill to the House on December 30, said:

"Notwithstanding the commanding position that the Government of the United States occupies in the financial world, yet our people feel the burden of excessive taxes necessary to pay the interest on it (national debt of 24 billion dollars) and to make some payments on the principal and to pay ordinary Government expenses. They feel the heavy load and they are demanding that Congress shall give them relief.

"The Committee on Appropriations has been working along one line for some time in order to help give relief. The committee has contended that there can be no substantial reduction in taxation until there is a reduction in appropriations; that the reduction in expenses must precede a reduction in taxation.

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"I believe that this Congress is bent upon the accomplishment of one big thing, and that is to reduce the high cost of government in order that there may be a substantial reduction in taxes." (Applause)

New Classification Bill: Representative Lehlbach's "Classification Act of 1920" Bill, introduced in the House on December 18, carries the following schedule of positions for forest officers:

FORESTRY GROUP

Grade 1. Junior Forester. Duties - To perform under immediate supervision the simplest kinds of work in forestry requiring professional training. Compensation - $1800 to $2160.

Grade 2. Assistant Forester. Duties - To perform under general direction assigned work in forestry requiring professional training and previous experience, but not the exercise of independent judgment. Compensation - $2340 to $2880.

Grade 3. Forester. Duties - To perform independently, or with a small number of subordinates in grades 1 and 2, responsible professional work in forestry requiring extended training and considerable previous experience.
Compensation - $3120 to $3840.

Grade 4. Senior Forester. Duties - To perform independent and highly expert work in forestry, or to be responsible for the administration of a minor division of a large organization engaged in forestry.
Compensation - $4140 to $5040.

Grade 5. Principal Forester. Duties - To act as assistant head of a large organization engaged in forestry, or as technical and administrative head of a major division of a forestry organization, or to serve as a consulting specialist in forestry, or to carry on the most advanced research in forestry.
Compensation - $5400 and up.

Grade 6. Chief, Forest Service. Duties - To act as technical and administrative head of the Forest Service.
Compensation - $6000 and up.

This classification is not only for positions within the District of Columbia, but also for the field service. A casual perusal of the 420 pages of the Bill failed to throw light on just where Forest clerks and stenographers come in. However, more will doubtless be heard on this measure in the future, since from present indications there is little prospect of this Bill receiving consideration from Congress during the present session.
(Later) Representative Fairchild (Indiana) on January 4 introduced a bill for reclassification of civilian employees of the Government in the District of Columbia and for the standardization of their compensation in line with recommendations of the Joint Congressional Commission on Reclassification submitted to Congress last year.

Washington Notes

Farmers' Bulletin No. 1183, "The Care of Leather," will be of interest to all Forest officers, since it not only tells how to make a judicious selection of leather articles, but also how to care for them so as to secure maximum service.

"His Last Buffalo," is the title of a real human interest story by Assistant Forester Will C. Barnes in the December issue of the "National Wool Grower."

Toys: American Forestry Association estimates that approximately 30,000,000 board feet of lumber was used in 1920 in American toy industry.

The Editor Says:

Timeliness is what "makes" a news item or story. Your contributions should, therefore, in so far as possible fit the season and be up-to-date news. This, of course, does not preclude the discussion of past or future Service problems.

Many articles are received that elaborate on subjects published in the Bulletin months ago. To print such items, unless the matter is of first-hand importance, is more or less a waste of space, since few officers will refer back to the original discussion to see what it is all about.

It is easier to tell a story in 1000 words than in 500, but does the reader gain anything thereby? Important matters deserve large space, but few news notes need take over one-half page, and few stories over one or two pages, double space.

That it makes his work doubly hard if you don't double space all articles and news notes.

That the Bulletin material is coming in in greater quantity and better shape than ever before. Thank you.

District 1 - Northern District

Game Patrol on Upper West Gallatin: The Montana State Game laws provide for the hunting of elk on the Upper West Gallatin from October 15 to December 1 of each year. Owing to climatic conditions prevailing during the season of 1920 practically no hunting was done until approximately November 10 and no extensive patrol was inaugurated until that date.

On November 10, four District Rangers, two vocational training Rangers, and the Forest Examiner were assigned to the game patrol work on the Upper West Gallatin, and particularly the Gallatin Game Preserve which is located immediately north of the Yellowstone National Park. These men were all familiar with the country, with most of the hunters, and knew their work and how to handle it. They have a direct personal interest in the protection of this game and compliance with the game laws, and are many times more efficient than any temporary men that could be employed for the work. It wasn't advertised that we were going to patrol this region this year, but the men were on the job presumably hunting. The Biological Survey had assigned a hunter to trap predatory animals in this region, and while getting acquainted with the country and waiting for his equipment to arrive he assisted in this patrol. The patrol used the Cinnamon Ranger Station as main headquarters, and it was only deemed advisable to establish one spike camp on the north boundary of the game preserve during the last five days of the hunting season.

What little hunting was done prior to November 10 had a tendency to drive all the local elk to the Game Preserve, and since there was practically no snow and an excellent stand of forage within the Preserve the elk never left it. Early in November a few elk drifted out of the Park into the Game Preserve, but owing to favorable climatic conditions and excellent forage in the Park, the most of these animals later drifted back. It is estimated that approximately 350 head of native elk congregated within the confines of the Game Preserve. Since practically all the elk in the country were located within the Preserve, all hunting was done along its boundaries and adjoining Yellowstone Park. The patrol was, therefore, confined mainly to the watersheds of Buffalohorn, Monument, Sage and Snowslide Creeks.

The spike camp was established on November 27 and was occupied by four men of the patrol. The camp was located without detection by the hunters and although diligently searched for they were unable to find it. From this camp the men were able to establish themselves on the passes and other strategic points by daylight or before, and when the hunters showed up they found the men already on the job. It is a well-established fact that game can not be driven at night. However, since their early morning attempts at drives had been blocked, the hunters attempted to make two night drives with flashlights. These only kept the few elk that might naturally have crossed the line, milling around within the Game Preserve. One hunter openly stated "that they knew they had no chance to make a day drive while we were on the job, since they could not find our camp, and we were always at the passes by daylight." Another hunter stated "that apparently there was a game warden behind every tree, and that a man had no chance to hunt in the game preserve without being caught." We did not attempt to obstruct or prevent their night work, since we knew it would result in no good, and our force was not large enough to secure sufficient evidence for making arrests for this violation.

On November 27 while en route to establish the spike camp three hunters were caught coming across the game preserve. One man had no gun, but one of his companions was packing two guns. The men stated that they had read the posters warning against carrying guns within the preserve. Two of these men were known game law violators, and their names were taken. After the close of the season warrants were secured for the two men with guns, and they were arrested at Sappington and Three Forks by two Rangers and the local Game Warden. They pleaded not guilty before the Justice of the Peace and were turned loose under bonds. Their trial was set for December 28 but has been postponed to a later date.

The local game warden arrested one man for trapping within the game preserve on evidence furnished by the men on patrol. When taken before the Justice of the Peace he pleaded not guilty and after spending a few days in jail was turned loose by the local authorities.

During the season of 1920 less elk were killed on the West Gallatin than were reported for many years past. Only approximately 35 head were killed, as compared to a normal kill of approximately 200 to 500.

The local game warden cooperated with us in this patrol work to the fullest extent, which is just the opposite to what had occurred along this line in past years.--B. W. Clark.

High Forest Values: The Harry Latchem sale on the Bitterroot, recently closed, furnishes some very interesting information.

There were 640 acres of timber cut over in this sale. The gross receipts were $36 per acre, or a total of $23,081.20. The net receipts were $30 per acre. We have left the land, at least $6,000 worth of timber and a good stand of reproduction. If the Government had sold this area under the Timber and Stone Act, before the Forest was created, the gross receipts would have been $1,600.

The total cut was 7,771,750 board feet or 12,140 board feet per acre. There was 10,570 feet of yellow pine, 1,330 feet of Douglas fir and 240 feet of dead timber. The yellow pine ran five logs to the thousand; the Douglas fir twelve.

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In many Ranger Stations, the real family gathering place is the kitchen, especially in the winter. That's another reason why it should be bright and cheerful. Light colored paint helps a lot.

District 1 - Northern District (Cont.)

Montana Sportsmens' Association: The Montana State Sportsmens' Association, which was organized in September, 1920, for the purpose of promoting the propagation and protection of game fish on the Forests, has forged ahead at a rapid rate, and has affiliated with it quite a number of the local sportsmens' associations of the State.

One of the things that this Association is going to strive hardest for is the establishment of a commission with broad discretionary powers to handle all phases of fish and game management. The program seems to meet with favorable consideration from a large number of influential citizens, and it is understood that the Governor-elect, Joseph M. Dixon, is agreeable to the appointment of such a commission, and is planning on making known this fact in his message to the State Legislature which convenes the first week in January.

If it is possible to get established this principle in Montana, it will mark the stepping-stone of progress in game management.--Glenn A. Smith.

More Good Pictures: There were received in the District Office at Missoula this week nearly 200 different views of scenes in several parts of District 1. These pictures were taken by Mr. E. S. Shipp, Official Photographer, last summer and represent what is to be found in some of the wonderlands of this District. Mr. Shipp was engaged for a good part of the season in photographing National Forest scenes on the Beaverhead, Bitterroot, Missoula, Flathead, Kootenai, Coeur d'Alene and Beartooth National Forests.

District 2 - Rocky Mountain District

A Record Season: Recreational use of the 27 National Forests in the Rocky Mountain District increased very materially in 1920. These great playgrounds, including over 20 million acres in Colorado, Wyoming, South Dakota, Minnesota, Michigan and Nebraska, were visited by over 1,408,000 people during the year. Some visitors spent several weeks, others spent only an hour or so, but the average time was a little over three days.

Over 1,135,000 of the recreationists came by automobile and many of the cars were laden with tents, stoves, bedding and other camp equipment. The people camped as they went along, covered several National Forests and lingered only at some of the unusually good trout streams.

Some of the most popular Forests were the Pike, Colorado and San Isabel in Colorado; the Shoshone and Bighorn in Wyoming; the Black Hills in South Dakota; and the Michigan and Minnesota in their respective states.

Colorado with her large acreage of easily accessible National Forest land had over 1,190,000 visitors, and the Wyoming Forests in this District had more than 74,000 visitors. Nearly 41,000 people visited the Minnesota Forests which gave them an increase of 39 per cent.

District Office Meeting: The second meeting of the personnel of the District office and the Pike Forest was held on December 9. Illustrated talks on Forest Management activities were given by Assistant District Forester Thompson and Mr. Fred R. Johnson.

In connection with timber sales, it was brought out that the timber sale receipts for the District during the past fiscal year amounted to approximately $287,500, it being the largest year we have had. A total of 1,754 sales was made.

The sawmill census conducted in cooperation with the National Lumber Manufacturers' Association has shown that there are approximately 465 sawmills in the states of Colorado, Wyoming and South Dakota, largely dependent upon National Forest timber.

During the past fiscal year, 5,658 free use permits were granted, providing for the removal of 16½ million feet of timber, valued at approximately $17,500.

The cruising of somewhat over 100,000 acres containing approximately 300 million feet of timber, within the Dolores unit in the Montezuma Forest was completed, final maps prepared, sample marking completed, and data secured for fixing the stumpage rate on this timber.

The cruising of 35,000 acres on the head of Wind River tributary to the operations of the Wyoming Tie and Timber Company on the Washakie Forest, was begun on July 1 and completed during the latter part of October.

Irrigated Land in Colorado: According to the last report of the Commissioner of Immigration for the State of Colorado, there are about 2,500,000 acres of irrigated land in the State, this including 220,000 acres of natural hay land which is irrigated. This land has an average value of $100 per acre, or a total value of $250,000,000. Sixty million dollars has been spent on irrigation enterprises in Colorado, and there is sufficient water to irrigate an additional million acres of land as soon as irrigation improvements are completed. There are ten million acres of non-irrigated arable land in the State which has a value of from $10 to $40 per acre. As more water is made available for irrigation, the value of this non-irrigated land will increase almost ten-fold, and the crops will also increase in large proportion. Since most of the water which is used for irrigating in Colorado comes from the National Forests, the importance of having a dense forest cover so a uniform supply of water is assured throughout the entire season, is quite evident to all foresters.

Salt Pool Association: On the Battlement and Gunnison National Forests a new pool system of handling National Forest range matters has been instituted.

The organization is composed of users of any given range unit, and is organized according to the Forest Service standards for local stock growers' association. The Advisory Board consists, as a usual thing, of five members, which is also the executive committee. One member of the advisory board is appointed Range Captain (range boss) and another member is selected for salt boss. The duties of the Range Captain are to cooperate with the Ranger as to the actual handling and management of the stock on the range while inside the Forest, also to have the same control over the stock owned by the members of the Pool while on the low public domain range. He directs and issues the calls for all round-ups, both inside and out of the National Forest. He also has charge of the stray days and sees to it that the proper report on the number of strays rounded up has been made to the local stock inspector.

The salt boss acts in conjunction with the Range Captain and cooperates with the District Ranger. The District Ranger and salt boss on the Gunnison have together selected the salt grounds and the salt boss has distributed the salt to the various designated places, as a usual thing, before the stock are drifted to the range. No salt letters are issued by the Rangers; all of this business is transacted directly through the Pool Association through the salt boss.

The salt boss is able to purchase the salt in carload lots at special wholesale rates, which in some instances has in itself caused sufficient saving to practically cover the expenses of one cow puncher during the grazing season. Under this Pool Association all expenses, including the purchase of the salt, the hiring of a cow puncher during the summer season, etc., are prorated to the various members of the Association in accordance with the number of stock actually grazed on the range during the summer grazing season.

Colorado Stock Growers Association

The Colorado Stock Growers Association held its annual meeting on December 21 and 22, and reports one of the best meetings in the 47 years of its existence. The unsatisfactory condition of the livestock interests had a great deal of attention and a number of theories were advanced for its betterment. Among them:--the establishment by the packers of retail meat markets, thus doing away with the heavy tolls taken by the middlemen, and the granting of longer credits to the farmers and livestock men. The taking over by the packers of the retail trade, of course, had opponents as well as advocates, but the general feeling is that some such system would have to be worked out both for the benefit of the producer and consumer. The present credit system is based on mercantile operations while the farmer and stockmen usually require at least a year in which to produce and market their products. The Association went on record as against any increase in grazing fees and passed a resolution asking for a reduction in the National Forest fee. A special sub-committee of the Association was appointed to work with the National Association in collecting data on the grazing fee question. The Association favored a change in the present state bull law providing for pure bred sires. They also passed a resolution providing for certain additions to the National Forests in the Uncompahgre and Gunnison country.

District 2 - Rocky Mountain District (Cont.)

Miss Gertrude Bungor has resigned to accept a more lucrative position with a commercial firm. Miss Bunger entered the District office at Missoula, Montana, 12 years ago as stenographer. Later she was transferred to Denver, this being her home, and she has since been a clerk in the District Office of Accounts. Her high efficiency, as well as her sunny disposition, which lightened many a gloomy accounts transaction, will be missed by her many friends in the Service.

District 3 - Southwestern District

Christmas Tree Demand Growing: That the Christmas Tree business in the Southwest is getting to be a set job on many Rangers' calendars is evidenced by the numerous newspaper clippings received concerning this activity. Apparently the most common and favorite practice is to set certain days when the Ranger will be on the ground to meet all comers and help them select their trees. The value of this system is obvious. Deputy Supervisor Kirby at Globe, Arizona, has enlisted the aid of Troop 2, Boy Scouts of Miami, to patrol the Christmas tree areas on his district to prevent trespass on the days when cutting is not to be done.

Bath Tubs: The Prescott "Courier" for December 14, featured Ranger W. M. Mickleson's new bath tub at the Sycamore Ranger Station on the Prescott, in a half column article headed "Luxurious Bath Tub for Forest Ranger's Home." Let us hope the day will soon come when bath tubs at ranger stations will be so common that the advent of a new tub will no longer be "news."

Flagstaff Chamber of Commerce on November 29 passed a resolution pledging itself to use its influence in securing increased financial support for its Fort Valley Experiment Station. Also that the Chamber proposed to have submitted a bill in Congress calling for an annual appropriation of $20,000 to support the institution whose work bears such a vital relation to the timber supply of Arizona.

What is the Matter with the Forest Service? Nobody seems to know anything, think anything, or realize anything any more; they only "feel." The Supervisor "feels" that the sheep will not go off till November. Has he received a telepathic message from the mystic woollies? Somebody in Washington "feels" that the annual Technical Report should be reviewed. Has the shade of some departed Forest Assistant been shaking his Ouija Board? Ranger Jones "feels" that his chicken-coop will over-run the statutory limitation. Has the comptroller negotiated a secret treaty with St. Peter? I am mystified by these things. Have these gentlemen arrived at their conclusions by the ordinary prosaic processes of observation and logic? Or has some guy really had a hunch? Their language ought to show which. All these feelings make me see spooks. Ranger Jones don't look like a medium, but you never can tell. I'm beginning to take notice of black cats. Please tell me how you feel about this proposition.--A.D.F.

G. A. Pearson and F. W. Haasis of the Ft. Valley Experiment Station read papers at the First Annual Meeting of the Southwestern Division of the American Association for the Advancement of Science, which was held in El Paso during the week of December first. Mr. Pearson's subject was "Making a permanent Resource Out of the Forests of the Southwest."

Forest Expenses: Cost per thousand acres gross area district administration of forests fiscal year 1920. Excluding special work, improvement allotments, etc.

Travel	Supplies & Equipment		Maint. of Passen. Carrying Vehicles	Rent,etc.	Telephone, etc.
	Protect.	Utiliz.			
$2.00	$0.031	$0.172	$0.042	$0.446	$0.077

Freight	Advertising	Maintenance of Horses and Trucks	Forage	Subsistence sup. Protection	Total
$0.156	$0.12	$0.238	$1.580	$0.102	$4.850

Summer Home Site the newly surveyed Pine Lodge area have been received by the Lincoln Office during the past week. This is in addition to the application for a municipal area received recently from the town of Roswell.

Night School: The second of the series of night school classes was held on the evening of December 14. Dr. Long gave an interesting and extended talk on the fungus tree diseases of the Southwest and, as the class was held in his laboratory, there was available a large amount of illustrative material. Forest Officers visiting Albuquerque will miss a treat if they do not pay a visit to this laboratory, see part of the vast collection of fungi there, absorb some of the interesting knowledge that Dr. Long has ferreted out and, not by any means the least of it, carry away a bit of the enthusiasm which Dr. Long has for this absorbing line of Forestry work.

Reconnaissance: Mr. Randles, of the District Office, and Messrs. Shepard and Brennan spent the fore part of last week in making an estimate and appraisal of several million feet of timber on Hogback Canyon on the Fort Wingate Division. An application has been received for this timber, but it is possible the War Department may want to reserve it as a lumber supply for building more permanent T.N.T. warehouses and for re-boxing the 30,000,000 pounds of T.N.T. stored there.--The Manzano Ranger.

Forest Fire in Norway: We are accustomed to think of perfection in all things Forestry as existing in Europe where the practice of scientific tree growing has prevailed for over a century. Also, perhaps, that devastating forest fires never occur in those well-managed forest regions of the Continent. "American Forestry" for December, tells of a fire in Norway that burned over 6000 acres in spite of the efforts of over fifteen hundred men to check it. The fire was stopped after about twenty hours fight but not before damage to the amount of over $200,000 had been done.

District 4 - Intermountain District

Just a "SDO" Pen: Supervisor "Bill" Anderson worked into the Christmas issue of the Vernal Express a dandy illustrated article on the Ashley Forest. In the next issue this editorial appeared under the title "Wealth of the Ashley Forest."

"The Ashley Forest is one of the greatest assets of this country, and under the able supervision of Mr. Anderson, is becoming more valuable as the years go by. People in general little realize the amount of hard work that is being done by Supervisor Anderson and his corps of forest rangers. Only as the scenic beauties, the range values, the timber values and many other values are brought to our attention by the able pen of Mr. Anderson do we even think much of the 'Wealth of the Ashley Forest'."

Does that last sentence tell us anything? "Bill" would indignantly deny that his pen, of the ordinary "SDO" variety, is any more able than that of any of the rest of us. No question of literary talent is involved. It is simply a matter of grasping the opportunities which come to us, or creating a few on our own hook, to place before the public the facts about the Forests and the work of the Service, in which the public has a real interest and to which it is entitled. Are we fulfilling our duty as officers entrusted with the management of such tremendously valuable and useful public resources if we sit back and force the general public to discover these resources and attractions for themselves. Or should we judiciously do all we can do keep the public informed? We do not need any press agent stuff--just the right conception of the relation of the Forests and the Service to the general public and then a resolve to take advantage of our opportunities.

Timber Company to Make Test Drive: Mr. F. Foutz, Director of the Utah Timber Company at Provo, Utah, called at the office several days ago and applied for a sale of approximately 5,000 ties, 20,000 pieces of 7-and 8-foot mine props, and such sawtimber as would be mixed in with this material. His company has been talking about making a sale of all of the merchantable timber on the Provo River watershed, some 130,000,000 feet, for the past 5 or 6 years. They have now decided that they would like to take out the small sale outlined above for the purpose of making a test drive on the river. The material will be driven down Provo River to a point a few miles below Heber City where the D. & R. G. Railroad crosses the river.

"Eliza" Makes a Get-Away: Ranger Quate has troubles of his own, according to the following:

"Speaking of the decadency of the Red Race, I don't believe in it, that is, I haven't believed in it since what happened today. About 9:00 A.M. I was speeding along on the Oliver at a high rate when 'click clack' said our new front gate (that fancy iron one you know). I glanced out to identify the arrival but beheld instead the departure of one Eliza, together with a generous portion of my well-beloved and hard-earned winter's woodpile. Eliza had three sizable sticks hung across her shoulders by a sort of sling which passed over her head and carried still another chunk in her arms. The load could not have weighed less than 100 pounds and she was headed for her wickiup about a mile away. Now to fully appreciate this story you should know Eliza. She is 187 years old (or appears to be) and is bent nearly double with the weight of her years. And Supervisor McQueen will vouch for the following: During the influenza epidemic of last winter Eliza was stricken with the disease and lay near death's door. Now among some Indian tribes a death within doors means that the house in which it occurs must be condemmed and destroyed. Eliza's loving relatives and friends were of this belief, but conceived the ingenious plan of saving the house by letting Eliza die outside. So outside she was put in the zero weather of mid-January, but die she would not and instead recovered rapidly after two or three days of the fresh air treatment. Whatever caused the cure Eliza is still with us and my problem is to save that precious woodpile.--Nevada Nugget.

Quick Work: Is this anywhere near the record? 10 A.M. Ranger Coulter apprehended a man with illegally killed game in his possession. He brought the man and game to Jackson, took him before a Justice of the Peace, where he was fined $75.00 and costs, and was back home at 6 P. M. Round trip 50 miles, 16 miles with horses and 34 miles with a jitney.--Teton News Letter.

Water Power: Application from the Utah Power & Light Company for their proposed power plant on Bear River has been referred to this office by the Federal Power Commission for investigation and report. The application involves four dams in Bear River and the installation of machinery which will generate approximately 21,000 horse power.

District 5 - California District

What Camp-Fire Permit Agents Think: Last season was the first year that campfire permits have (except as a war emergency measure) been required in Northern California. Several northern Forests induced local merchants, etc., to act as agents, issuing permits upon application and without expense. Here is what three of the Shasta's volunteer agents think of the scheme:

1. "I am highly in favor of your work and will cooperate to the full extent of my ability. It is not much, but the interest I take in it will perhaps have some bearing on the result."
2. "If our help in issuing fire permits has been of any value in protection of our forest we are glad and willing to help in 1921." (Note the "our Forest." This is the spirit that counts).
3. "We will be very glad to continue to issue permits for you if you care to have us do so."

Federal Bureaus in San Francisco: A recent compilation by District Forester Paul G. Redington reveals the fact that there is, within San Francisco proper, a total of 165 bureaus of various departments of the Federal government. Ten departments are represented, and if each Department adopted the cross-reference scheme of listing that is used by Agriculture the telephone directory would have 495 places taken up by the Federal government.

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In 1850 New York ranked first among the states in lumber cut. It now contributes only one per cent of the total. That's what comes of emptying the bucket but never filling it up.

A New Years Resolution: To be joyous in my work, energetic but not excitable, enthusiastic but not fanatical; loyal to the truth as I see it, but ever open-minded to newer light; to be careful in my promises, punctual in my engagements, candid with myself and frank with others; to do my work and live my life so that neither shall require defense nor apology; to be gentle and considerate toward the weak, respectful yet self-respecting toward the great, courteous to all, obsequious to none; to invigorate my mind with noble thoughts as I do my body with sunshine and fresh air; to prize all sweet human friendships and seek to make many homes happy; to be indifferent to none, helpful to some, friendly to all - this shall be my endeavor during the year.

Supervisors' and Liason Officers' Meeting: A Supervisors' meeting has been announced to be held at Mather Field near Sacramento in connection with the Allotment conference and the Liason Officers' conference. The Supervisors' meeting and Allotment Conference will be from January 31 to February 5 inclusive. The Liason Officers' Conference will be held from January 17 to February 15. At this latter meeting four representatives from District 1, eight from District 5, and four from District 6 will be present. Special attention will be paid to instruction in radio sending and receiving, in interpretation of maps, in actual location of fires by Forest officers while acting as observers in test flights from the field.

In Solid with the Hunters: "Our National Forests have afforded me much recreation, pleasure and inspiration. Should I neglect or refuse to aid in their conservation I would be false to my convictions. I assure you my services were gratis, cheerfully so," writes a well-known real estate man of San Francisco to Supervisor Durbin (Modoc) when the latter offered to settle for services rendered by the man and his party at the Egg Lake fire last summer.

A Sound Definition: By Robert Sterling Yard. "National Parks are National Museums. Their purpose is to preserve forever, in their original untouched condition, certain few, small, widely separated examples of the American Wilderness of the pioneer and the frontiersman, of the works and processes of Nature unblemished by man's hands; of our native wild animals living natural lives in the natural homes of their ancestors.

"National Parks are popularly called Playgrounds, but that is not their definition. National Forests are playgrounds, also, and of high degree. Irrigation, water-power, forestry and hunting in season are permitted in National Forests, but not in National Parks."

As a Follow Up to our exhibit we have prepared and are loaning to the San Francisco Board of Education a series of 75 colored slides depicting the National Forests in California, their resources and the varied work done by the Forest Service.

T. D. Woodbury, Assistant District Forester, at the Adler Sanitorium with a compound fracture of the left leg, is now resting easily.

District 6 - North Pacific District

Small Mill Efficiency: A small portable mill on Trout Creek, on the Colville Forest, has attracted considerable local attention. It is operated by only two men, and its products are slabbed ties. In one afternoon 100 ties were made, and the average day's run is close to 150. The larger mills can beat this in quantity, but their operating costs would far exceed those of this small gasoline-run mill.

Watersheds and Sheep: Supervisor Sylvester has been appointed on a committee of the Wenatchee Commercial Club to investigate and report on the damage to watersheds caused by sheep grazing. Water from streams rising in the Wenatchee irrigate areas equal to about half the area of the Forest. These irrigated lands are worth from $500 to $2,000 per acre; without water their value would be about $5 per acre. Will some statistician figure out the value of the forest lands?

Range Management on the Ochoco: A summary of range accomplishments during the past year shows that at least some advancement is being made. In the Snow Mountain district, in charge of Ranger E. W. Donnelly, one sheep man has expended probably $1,800.00 of his personal funds in an effort to develop water for a band of sheep. He drilled to a depth of 312 feet during the past season-and--while money among sheep men is pitifully scarce at this time--the man is not discouraged but will continue with the work when the weather conditions are favorable next spring.

Olympic Elk Increasing: The appearance of several elk herds seen by rangers and members of this office during the past few months indicates that the late and light snows of last winter allowed the herds to get through the winter in good shape. Several herds counted by Forest officers had nearly as many calves as cows, an unusually good proportion, and the animals seemed to be in very good condition.

Soleduck Plantation Doing Well: An examination of the little Douglas fir trees planted on the old Soleduck burn near Lake Crescent this past spring and a year ago shows that they have gained a good hold on the mountain side. Over 600,000 trees are still alive on the 1300 acres planted during the two years. This means that about 80 per cent of the trees originally planted are growing up to make a new forest to replace the one burned down years ago.

The chief causes of loss are the little Chehalis mountain beaver, which cut the trees down to use them as fodder, and the lack of moisture on the rocky mountain side during the long warm summer. The native grouse also do some damage by nipping off the fresh buds of the little trees.

No Dead Ones: Among the road equipment that the Forest Service received from the War Department were some Ford ambulances. By removing the tops and perhaps other changes these could be transformed into light trucks. A D-6 supervisor was informed that his Forest would receive one of these, whereat he wrote, to wit:

"Your letter dated November __ is received, stating that a Ford ambulance is being assigned to the ______________. We are gratified that it is an ambulance instead of a hearse and after some discussion believe that it may perhaps be intended to take care of those injured by our truck rather than to dispose of such members of the force who may be considered incapacitated for other reasons.

"We will be glad to receive it and can assure you that we are prepared to make use of any kind of vehicle from a flying machine to a hearse in connection with the various forest activities."

The Eagle Screams--Softly: The Blue Mountain Eagle of Canyon City, Ore., has in the past "taken a fall" out of the Service more than once, and therefore the following from the eyrie of the Eagle is of unusual interest:

"C. C. Reid, newly appointed supervisor of the Malheur Forest, with headquarters at John Day, arrived last week with his family at John Day and has assumed the duties of the office.

"Mr. Reid is a big fellow, about as long as Cy Bingham, but not so thick. He is a western man, and radiates the spirit of the west. He has been in the service at Republic, Washington, and up near the Canadian line. He is a man of very pleasing personality and looks like he has a pretty 'good head' and just the right type of man to make friends with the stockmen, and the Eagle predicts that he will, and as long as he is fair, reasonable, frank, and just, the Eagle will fight on his side. Mr. Reid would no doubt regard this as a sort of a rude introduction to the people of Grant county, were he not a western man. But that is not our intention, for we believe Mr. Reid is a thoroughly capable man of fine personality, and that he will not only have warm friendships with the users of the Forest, but that this friendship will endure. We regard Mr. Reid as a fine appointment and we suggest that as the users are in John Day, they call on Mr. Reid and get acquainted."

SERVICE BULLETIN

U. S. Forest Service

Washington, D. C. - January 24, 1921.

(Not for Publication)

AGRICULTURAL APPROPRIATION BILL REPORTED

The Appropriation Committee of the House has reported the Agricultural appropriation bill to Congress carrying a total of $33,517,459, which is an increase of $1,804,675 over the appropriation for the current fiscal year. $1,248,480 of this increase goes to the Forest Service, $1,000,000 being for the acquisition of lands under the Weeks Law and $30,000 for the examination of the Northern Pacific land grant. Two Forest Service items were reduced--salaries to the amount of $3,360, and land classification to the amount of $12,000. Very few increases were allowed, and in practically no case was the total amount of increase requested allowed by the Committee. The lump sum item for the employment of Forest Supervisors, Deputies, Forest Rangers, and Guards, was increased $50,000. The lump sum for National Forests was increased $137,100. The item for Forest Products Investigations was increased $26,740, and Reconnaissance of Forest Resources was increased $20,000. The bill carries wording allowing the purchase of buildings hereafter and grants authority for the erection of not to exceed ten Ranger Stations, at a cost not to exceed $2,000 each. It also gives the Forester authority to expend not to exceed $5,000 from the permanent improvement fund in the purchase of land for Ranger Stations.

The bill now goes to the House and will probably pass in substantially its present form. The Forest Service hopes to have an opportunity to make a further presentation to the Senate Committee showing the urgent needs of the organization.

The Ancestors of the Sequoias

The two extant species of Sequoia, the big tree and the redwood, unique among trees for age, and size, are, according to Professor Edward W. Berry, Johns Hopkins University, the restricted survivors of a once widely distributed genus. Their dispersal began in the early period (Jurassic) of the previous geological era, the Mesozoic or Age of Reptiles, and during this age they probably radiated from the Arctic archipelago southward over western Europe, North America, and the eastern coast of Asia. Twigs, cones, and seeds were left abundantly among the Lower Cretaceous or Comanchean rocks. During the Tertiary period of the succeeding Cenozoic era or Age of Mammals, the Sequoias reached their maximum distribution over practically all of Europe and North America, a large part of Asia, and southern South America. Sequoia langsdorfii, the direct ancestor of the redwood, was predominant in the great circumpolar forests of the late Mesozoic, and Sequoia magnifica, almost identical with the redwood, left the petrified trunks found in Yellowstone Park and at Florissant, Colorado (Pike N. F. officers please note). During the cold Pleistocene which preceded our recent geological period, the Sequoias disappeared except in the Pacific coast area where they are still dominant.--Scientific American Monthly.

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Ranger Bill Says

"Pears like the higher you get in the Service
the less you know about the Manual."

"The Forest Assistant's been laid up at the Ranger
Station goin' on a week, breakin' in a new uniform.

"Supervisor Jim inspected the Big Hollow timber sale
yesterday and disapproved the markin' he done last fall."

Interior Department Renders Important Decision

By E. A. Sherman

Secretary Payne, of the Department of the Interior, rendered a decision January 13, 1921, finally rejecting the application of A. C. Shaw to select certain lands in Oregon. This decision is one of the most interesting and gratifying land decisions received by the Forest Service in many months.

Although only 40 acres of land was involved in the application, the land was part of a larger tract of exceedingly valuable timberland which at the time of the filing of the application was in similar status. The total area involved was 3,680 acres. The lands were at one time patented to one C. A. Smith, and by him transferred to the Linn & Lane Timber Company. The patents were canceled because of fraud and the decree was affirmed by the United States Supreme Court. The lands lie adjacent to the exterior boundaries of the Santiam National Forest and were withdrawn in aid of a bill introduced in Congress to add them to that Forest. They are rough, non-agricultural lands, heavily timbered, and carrying a total of 247,196,160 board feet of merchantable timber, or an average of about 67,000 feet B.M. per acre.

After the lands had been withdrawn by executive order, applications to select under soldiers' additional scrip were filed by Alexander C. Shaw, assignee, in the Roseburg land office for most of these lands. A test case, now decided, was made on the given 40-acre tract. The decision of the Land Office was uniformly adverse to Shaw, and that decision was affirmed by the Department of the Interior May 5, 1919. However, a motion for a rehearing was granted Shaw May 8, 1920, the position then being taken that the executive order withdrawing these lands had expired by time limitation. The order of withdrawal, issued during the 62nd Congress, had stated that the lands were withdrawn in aid of legislation then pending. The 62d Congress adjourned without taking action upon the pending bill. At the time of Mr. Shaw's appeal no new bill was before Congress, and he took the position that the lands were automatically restored to the public domain by the expiration of the 62d Congress. From this decision the Secretary of Agriculture appealed, asking for the exercise of supervisory authority. This was granted, and the Department's original decision of May 5, 1919, adverse to Mr. Shaw, is reaffirmed. The decision, which is based upon two points, is most clearly expressed in Secretary Payne's language as follows:

"1. That the Commissioner of the General Land Office, April 20, 1916, directed the Register and Receiver of the local land office as follows: 'You will note upon your records that the patents to the various tracts of land hereinbefore described and stated to have been withdrawn pending legislation have been canceled and the lands restored to the public domain, but will not become subject to entry or any form of disposition by your office until you are instructed by this office. Having made such notation you will thereafter with regard to these particular lands govern yourself accordingly.' Notation was accordingly made on the books of the local land office, and so far as the Land Office had power, the land was expressly withheld from entry and the public so advised by the order aforesaid.

"The entry by claimant in the face of this order was not, in my view, effective, and this notwithstanding the fact that the President's order of withdrawal, dated August 13, 1912, terminated with adjournment of the Sixty-second Congress.

"2. That the Department, in restoring land to the public domain, has authority of law to determine in the interest of the public at large, as was done in the instant case, whether or not the land restored will immediately, or at some future date, be subject to appropriation or disposition under the public land laws. United States, ex rel., McBride v. Schurz, (102 U.S., 378, 401)."

What the White Pine Blister Rust is Doing

By S. T. Dana

One of the most interesting points brought out at the Sixth Annual International Blister Rust Conference held at Boston last November was the practical impossibility of controlling the disease should it ever secure a foothold in the western United States. So far as is known, it has not as yet made its appearance west of the Great Plains. It is very evident, however, that the utmost vigilance will have to be maintained if it is to be kept out indefinitely. During the past year several wilful violations of the quarantine which the Federal Horticultural Board has established at the Mississippi Valley prohibiting the shipment of currants, gooseberries, and white pines to the Western States have been discovered. How many undiscovered violations of the quarantine there may have been and whether the disease was carried by any of these is, of course, unknown.

While the blister rust is now being satisfactorily controlled in many localities in the eastern United States through the eradication of Ribes (currants and gooseberries), the pathological experts say that they would throw up their hands if it ever becomes really established in the West. In that region a number of factors combine to make the control of the disease practically out of the question. There are more species of five-needled pines than there are in the East, and all of these are highly susceptible to the disease. Ribes is also found throughout the region in a wide variety of species, many of which reach the size of large shrubs, the eradication of which under any conditions would be difficult. Moreover, the topography is so rough, the country so comparatively unsettled, and the great majority of pine stands so inaccessible, that the control of the disease by the local means used in the East appears wholly out of the question should it once become established there. It is therefore of the utmost importance that Federal, State, and local authorities, nurserymen, and the public generally, should cooperate heartily to enforce the present quarantine and thereby prevent the introduction of the disease into the West.

The experience of the past few years in the eastern United States has been such as to convince even the skeptics that the blister rust is not to be scoffed at. The damage caused by the disease is of two main sorts,--it kills the smaller trees up to approximately 20 feet in height whether in the nursery, in plantations, or in natural stands, and it decreases the rate of growth of the larger trees. In severe cases it may even result in the death of the latter. The extent to which the disease is present in the Northeast is indicated by the fact that sample strips run in NewEngland and New York during the past year show approximately 10 per cent of the pine stands to be already infected. Furthermore, a hasty survey of conditions throughout these States has indicated that wherever currants and gooseberries occur the disease is also present on these. There is, therefore, every probability that the present infection will increase rapidly, particularly where local climatic and vegetative conditions are favorable for its spread, unless energetic control measures are promptly undertaken.

Fortunately, experience has shown that the control of the disease is possible by the eradication of currants and gooseberries, from which alone the pine can be infected, and the value of which is obviously much less than that of the pine. In New England during the past year effective eradication has been conducted on a considerable scale at the very reasonable cost of about 25 cents per acre. While the cost elsewhere has so far been higher, it is still moderate in comparison with the magnitude of the pine values involved. Emphasis should, however, be laid on the fact that similar control measures can not be counted on in the West and that it is therefore imperative to keep the disease out entirely.

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Has "Let George Do It" been your slogan?
Why not try "I'll Do It Myself" - just for a change?

Mechanical Attack on Fire

By M. A. Grainger

(Lately Chief Forester of British Columbia)

There is a lack of balance which we are trying to remedy in forest fire work. Motor patrols, wireless telephony, publicity, have all been brought into use, to detect and prevent fires; but the actual attack on a forest fire has kept on being mostly a pick-and-shovel, gunnysack-beating affair. Feeling that these useful articles are not the last work of modern fire-fighting science, the Forest Service has been testing portable gas driven pumps. We have over 40 now in use, and the results have been most satisfactory. They do not replace picks and shovels, but supplement them much as a machine gun gives powerful support to rifle fire. Where water is available, one pump does the work of 20 men and far more efficiently. Near Cranbrook a single pump was largely responsible for keeping fire out of a valley containing 200 million feet of timber. Up this coast, the inhabitants of a little sawmill settlement had given up fire fighting one day last summer, and were watching the approaching fire in despair, when one of our launches arrived. The ranger and a pump came into action, and in a very striking manner the whole settlement was saved. Wherever a logging operator sees the work these pumps can do, he says he will get one for himself at once, and I hope he does not forget next day.

The pumps are gasoline-driven; weight 170 pounds; throw 45 gallons a minute, with a 180-foot head and cost about $800, with 1,000 feet of hose, complete. By using a relay tank, a couple can be used on a working radius of 2,000 feet.

For cooperative work with the various government services, the Canadian air board has just equipped a seaplane station near Vancouver, with hangar, slipways, machine shop. Two types of machine are provided for--the big, heavy twin-engine flying boat that can carry 14 persons, including the crew of three, or the same weight of fire pumps and equipment; and the medium size seaplane carrying one pilot and four passengers. For the present, we do not figure on patroling in the air to detect fires; the main idea is to provide a taxi service, with machines ready to take the air in any fire emergency.

Lithography

The process used most frequently in printing maps of the National Forests is Lithography. The word is derived from two Greek words "lithos," stone, and "graphos," write.

The name is descriptive of the process, particularly in its original form, a slab of limestone being used to print from. The process is based mainly on two factors, the facility with which the stone receives and holds impressions and its susceptibility to the action of acids.

The process originated in Germany and its discovery was accidental, as has frequently been the case with "discoveries." The story is that a music teacher on his rounds was caught in a drenching shower and on reaching home spread his wet hand-made sheets of music on the hearthstone to dry. The hearthstone happened to be made of a form of limestone, and upon removing the sheets, the musician noticed that a perfect replica of the musical notes remained on the stone.

He found that he could not remove the impressions by water; also that the ink lines shed the water and remained dry while the uncovered surface of the stone readily retained moisture for some time. This suggested passing a printer's roller covered with ink over the stone and it was found that the dry ink lines held the fresh oily ink, while the wet stone rejected it. Impressions on paper could then be obtained by using a press and repeating the wetting and inking of the stone for each copy. Later it was found that by using an acid-proof ink, the portions of the stone not protected could be eaten away by acid and the lines to be printed brought out in relief like type, thus yielding impressions more readily. Though many improvements have been made to facilitate the process, this still describes the basis of it.

Owing to the bulkiness and cost of lithographic stones (those for large maps weigh as much as 800 lbs., and cost at present over $200.00) specially treated thin plates of zinc or aluminum are being introduced.

If you are interested in the subject, the next issue of the "Bulletin" will add to these few historical facts the story of "How a Lithographer Puts a National Forest on Paper."

To be strictly fair, one other "historical fact"(?) should be added to the above. Credit of the discovery should be given to womankind, as is the case with many discoveries beginning with that of the edibility of the apple. Most lithographers, especially the married ones, believe that the musician's good-wife called him down for mussing-up the hearth and that in attempting to appease her by cleaning-up he made a world-famous discovery.--C.A.K.

Aliens vs. Citizens

By J. W. Nelson

The overgrazed condition of three of the Arizona National Forests made it necessary for the Forest Service several months ago to reduce the number of stock grazed under permit, such action being imperative to stop damage to the Forest. Under the direct instructions of the Forester it was decided that such reduction should fall first upon alien permittees. This action was taken under Regulation G-15, which provides that "citizens of the United States will be given preference in the use of the National Forests," and the instructions thereunder providing that "no properly qualified citizen of the United States will be denied a permit or subjected to a reduction in permit number to provide range for an applicant who is not a citizen of the United States."

The alien permittees, whose grazing preferences were thus canceled, appealed from this decision and employed as their representative an able firm of Phoenix attorneys. The attorney for the aliens presented the case in person to the Forester, to the Solicitor, and finally to the Secretary of Agriculture. Apparently the attorney realized that the equities were all on the side of the citizen permittees, and in consequence based his argument almost entirely upon the claim that the regulation was illegal. He contended that the Secretary was without authority to make a regulation of this kind discriminating between aliens and citizens. As a matter of fact, the entire structure of preferences upon which the grazing administration of the National Forests rests would have been overthrown if this contention were sustained. Realizing the large issues which were at stake, the Solicitor decided to secure a decision from the highest executive authority, and to this end put the question up to the Attorney General. The Attorney General's decision, rendered December 31, 1920, sustained the legality of Regulation G-15. In passing upon the question the Attorney General said:

"Assuming, without deciding, that the Secretary's discretion in promulgating these rules and regulations, especially Regulation G-15 of the National Forest Manual, can be challenged by an alien, the question arises, is the regulation illegal as an arbitrary discrimination or beyond the administrative power authorized by Congress? Congress has seen fit to limit the right to acquire title to the public domain under the homestead, desert land, coal land, and mining laws to its citizens; it has also limited the right to acquire easements and rights of way to citizens. * * * *

These Acts are in accord with the long recognized principle that the title to the public domain, while absolute in the United States, is yet held for the benefit of the people of the United States. It can not be thought that the ownership or use of the public domain is held by the government for the benefit of aliens.

The Grimaud and Light cases, supra, conclude the question of the power of the Secretary to make grazing rules and regulations, and that his permit is a prerequisite to the use of the Forest Reserve for grazing purposes. Manifestly he must make some regulation for the distribution of the available range, where its protection and preservation demand it, and in this distribution his action in giving preference to citizens of the United States is in accord with the well-established policy that the public domain is primarily for their benefit rather than for the benefit of aliens, and is well sanctioned by the precedents set by Congress.

I am therefore of the opinion that the regulation quoted above is not illegal."

Copies of the opinion are on file in the offices of the District Assistants to the Solicitor.

Using Fire in Our Work

By Ivan Cuff--Modoc

While fire is one of the hardest problems a ranger has to contend with in forest protection, there are times when it can be used to good advantage. A very common use of fire is in the disposal of refuse from timber sales, refuse which would be a great menace in the dangerous fire season.

Fire is also often used as a means of stopping fire. Anybody who has had experience in fighting forest fires knows what a menace the old dead trees and snags are in scattering fire. Fire can be used to good advantage in disposing of these snags, especially in areas where the hazard is greatest. The old drybstanding trees can be very successfully burned during the winter when there is no danger of fire spreading. A large percentage of the trees will burn down and burn almost completely up, and those that do not will be so well charred as to be of little menace.

That fire can be very successfully used in hollowing out logs for watering troughs is not known to a good many. I had heard of a few stockmen using fire to make watering troughs, but never realized how well it would work until the experiment was tried out. In using this method a green tree of the desired size should be selected and felled. Lines marking what are to be the edges of the trough after it is hollowed out are made along the length of the log. A two-inch auger is then used to bore a row of holes sixteen inches or so apart and extending from just inside one of these lines to the center of the log. Another row is bored from the other line in the same way so that the two rows meet in the form of a"V". Fires are then started in the bottom of these holes by dropping in lighted pitch shavings. When they get heated up and take hold these fires will take care of themselves. The heat being confined keeps them burning. Of course the fire has to be carefully watched when the burning is well advanced, and extinguished when sufficiently hollowed out or it will burn clear through.

Burning will be a good deal more rapid if after the holes are bored the log is partly turned so that one of the rows of holes will be vertical. The vertical holes will act as chimneys and the slanting ones will furnish the draft. The holes may be bored in these positions in the first place to save turning the log. One man can attend to several such burnings at the same time if they are near each other.

The auger can be used in the same way to burn logs from roads and trails when there is no danger of fire spreading. In this case a pair of holes in the log on each side of the road or trail is all that is necessary. In boring the holes the first is bored vertically from the top of the log and the second one horizontally from the side to meet in the center. On account of the inconvenience of transporting a saw, wedges, etc., when making a trip with some other object in view, a ranger will often pass up a log in the trail until he can make a special trip to remove it. An auger would not be so inconvenient to carry, and after getting the fire started he could go on about his business. The fire will usually do the rest. In most cases it will burn the log completely in two. If the section between where two fires are set is not completely burned up the remaining part can be rolled out of the way.

The auger method can also be used to burn down trees. In fact, old timers have told me that they used this method to burn down very large trees in Oregon and Washington in early days. A hole is bored horizontally into the tree, and directly above it another hole is bored slanting downward to meet the lower hole in the center of the tree. The fire is then started by dropping lighted pitch shavings into the upper hole, and left to do the rest. I believe this method could often be used to good advantage in disposing of burning snags and trees inside of a fire line.

Prizes for Tree Growing

Prizes amounting to $500 will be awarded during 1921 to the winners of the tree-growing contest among members of the Boys Reforestation Clubs now being formed in Louisiana, according to announcement by M. L. Alexander, State Conservation Commission.

Colonel W. H. Sullivan, Vice President of the Great Southern Lumber Company at Bogalusa, who as a member of the forestry board first conceived the idea of the Reforestation Clubs and offered the $500 for prizes, has outlined his plan as follows: "To be a member of a Reforestation Club each boy should have charge of a tract of land being reforested either naturally or artificially, and on his success in producing a valuable forest of young trees would depend his capture of a prize. To insure some permanency to the reforestation projects, the boys' fathers would be expected to enter the customary contract with the state forestry officials, under which advantages in taxation are granted in return for the agreement to reforest land. On nearly every farm there are a few acres of idle land, generally poor land not suited for crops, which the owner could turn over to his son for tree-growing. Such a proposition, under State supervision, is a first-class endowment policy, rivaling life insurance. When the boy grows up he has a valuable piece of property to give him a start in life."

Chestnut Blight and the Future of Chestnut

Eastern foresters are confronted with the wholesale destruction of a valuable hardwood species in the period of a brief rotation. Already much of the natural chestnut range is devastated and the merchantable material killed. There is little hope but that the remaining area will suffer like damage. However, there is a slim chance for the species through its capacity for sprouting or coppicing. In the November issue of the Journal of Forestry Hodson advances the view, based on indications on the older blighted areas, that the species may be developing immunity through repeated sprouting. Should this theory prove well founded the species will reappear, although present merchantable stands may be destroyed over the entire range.--E.R.H.

Supreme Court Approves Conservation Principles

The Supreme Court of the United States rendered a decision on December 13, 1920, which will be read carefully by those interested in the conservation and utilization of our natural resources. The decision is looked upon with hope by the friends of the new forestry movement that a similar line of reasoning may be found to require the practice of proper methods of timber growth and timber cutting through the police power of the States. While the decision in this case was regarding the use of natural gas, it showed very clearly that the State has the power to prevent a citizen of the State from using his land in any way which he sees fit, if it is found that such use will interfere with the enjoyment of similar rights by others.

The question before the court in the case decided was the constitutionality of a Wyoming State law, which was intended to prevent wasteful use of natural gas by corporations obtaining such gas within ten miles of an incorporated town. The available supply in the case considered would be exhausted within 16 months unless the wasteful practices by the corporation were discontinued.

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Supreme Court Approves Conservation Principles (Continued)

Throughout the decision the impression is given that the Supreme Court realizes that our "natural resources" have a limit and should be wisely used to that they will not be wasted. Also, it is noted that the court frequently used the terminology so long in vogue by those who have preached the doctrine of "the conservation of our natural resources." In the first place, Justice McKenna, who rendered the decision, summed up the question before the court as follows:

"The question in the case is, as we have said, whether the legislation of Wyoming is a valid exercise of the police power of the State, and brings into comparison the limits of the power as against the asserted rights of property, whether it, the legislation, is a legal conservation of the natural resources of the State, or an arbitrary interference with private rights."

He announced that there is ample authority for the position that "a State may consider the relation of rights and accommodate their co-existence, and in the interest of a community, limit one that others may be enjoyed." He cited the right of the State of Idaho to regulate the grazing of sheep in certain localities; the right of the State of New York to prevent waste in the supply of natural carbonated gas. The court found that "the determining consideration is the power of the State over, and its regulation of a property in which others besides the companies may have rights and in which the State has an interest to adjust and preserve, natural gas being one of the resources of the State." Moreover, that "there was presented to the judgment and policy of the State a comparison of utilities which involved as well the preservation of the natural resources of the State, and the equal participation in them by the people of the State. And, the duration of this utility was for the consideration of the State, and we do not think that the State was required by the Constitution of the United States to stand idly by while these resources were disproportionately used or used in such a way that tended to their depletion, having no power of interference."--W.J.M.

Saving the Paintbrush

(Note: With the limited appropriation for improvement work available to the Forest Service the maintenance of equipment is an important item. Large numbers of paint brushes are used by Forest officers each year, and the following clipped article is presented with a view to aiding them to care for and preserve such equipment.--Ed.)

It would be hard to find a workshop **** in which there are not several expensive paintbrushes that are beyond the point of usefulness, due either to improper care of them when a job of painting had been completed, or ignorance of some simple method of cleaning which would keep the bristles in good condition. ****

All brushes, whether new or old, when not in use should be kept in a cool place in order to prevent shrinkage of the handle shank; otherwise the bristles will become loosened and the brush worthless.

Most new brushes, even of the better grade, will shed some bristles in the first usage, but this may be prevented to a considerable extent by working them thoroughly while new and dry. This will remove most of the loose bristles. Follow by dipping the brush into lukewarm water for a minute or two--not long enough to soak it through--and immediately dry with a cloth or by working out the water on a clean, dry board.

Care should be taken that the bristles are not left in a mussed or twisted position when the brush is not in use. If necessary to lay it aside for a while, wipe the bristles against the inside of the paint can to draw them to a chisel point and lay the brush flat on its side. Do not leave it standing in the can.

Saving the Paintbrush (Continued)

When changing from one color to another clean the brush in turpentine only, but when discontinuing work for several days it is advisable to dip the bristles in oil--not linseed oil, as this will harden in time, leaving a crust of film on the bristles--and wipe dry as before.

In an emergency, on rough painting jobs such as barns, wagons, or implements, if one has not the time to clean the brush, it may be suspended in a can of machine oil indefinitely without serious damage. It may be cleaned with turpentine.

The workshop is not always a desirable place in which to keep brushes on account of the dust caused by repair work. If a forge is included in the list of tools used therein the heat at times may damage the brushes by drying them out. This is easily prevented, however, by wrapping the brushes separately in several thicknesses of oiled paper and supporting them between two nails on the wall, bristles down. I have found that varnish brushes, or those intended for fine work, are best kept temporarily in turpentine, but in putting them away they should be cleaned and wrapped as described.

Remember that an ounce of prevention, through care of the new brush, is worth pounds of cure.--Country Gentleman.

Washington Notes

"Unto the Least of These":--The men and women of the Forest Service in Washington have contributed, since the beginning of the War, a total of $1,640.95 toward the support of "the fatherless children of France."

Income Tax: Government employees in making out their income tax returns must include as part of their incomes the $2\frac{1}{2}$ per cent which has been held out since last August, when the act providing for annuities for retired employees went into effect. The rule is set forth in Treasury decision No. 3112, issued by Paul F. Myers as Acting Commissioner of Internal Revenue, and approved by Secretary of the Treasury Houston.

Wild Life Observations: The Editor of "Forest and Stream," one of the oldest outdoor life magazines in America and the official organ of the Forest and Stream Society, has requested that the Office of Information furnish him with news items concerning wild life in the National Forests as observed by Forest officers. If sufficient data of this character can be gathered together, there is good chance of having it published in a special "National Forest" page in the magazine. Considerable information of this character is known to exist in District and Ranger's files, and it will be appreciated if this material, together with new observations made from time to time, can be sent the Washington office for use in "Forest and Stream." This is a good chance for publicity--let's not pass it by.--Editor.

Government Employees in Washington: Uncle Sam's force of employees in Washington now number slightly more than 85,000 as against a total of 102,000 on January 1, 1920.

The Cafeteria

(Hungry Forest officers, who rush out at noon, grab a bite and then try to get back to work within the 30 minutes allowed for lunch, will find a world of truth and satisfaction in the following lines.--Ed.)

We stand with trays and wait our turns, a long, long line of hungry guys, while appetites within us yearn for Hubbard squash and custard pies. Before us there are many jays who fool and fiddle, which is wrong; and so we wait and wave our trays and wish the bunch would move along. One graybeard can't make up his mind between roast pork and shredded veal, and while he doubts the mob behind must all the pangs of hunger feel. One woman stops, a

The Cafeteria (Continued)

row to raise, because the soup is half-way cold; and while she jaws we clasp our trays and feel ourselves grow frail and old. We all must wait until our turn, in vain are protests and appeals, though while we're waiting we could earn the price of fourteen useful meals. It is a modern way to feed, and modern things, we know, are best; old ways, old times, are gone to seed, old restaurants are but a jest. We used to journey home at noon, before old ways were proven frauds, and there devour the wholesome prune, surrounded by our household gods. And then we'd have a little snooze, to rest our bones so tired and sore, and, having slept, put on our shoes, and go downtown to work some more. But we've forsaken old-time ways, from ancient things afar we roam; and now we stand and hug our trays, and wait until the cows come home.--Walt Mason.

New Legislation in Congress

House Kills Bonus: On a point of order made by Mr. Blanton (Texas) the bonus section was struck out of the Legislative, Executive and Judicial Appropriation Bill on January 14. It is understood that the majority of Senators are in favor of a bonus, so that there is little doubt but that this matter will receive further consideration when the bill comes before the Senate.

Land Legislation: The House on January 17 passed the Bill (H.R.13051) to add certain lands to the Lemhi National Forest, Idaho; Bill (H.R. 11851) authorizing the exchange of lands within the Rainier National Forest, Washington; and Bill (H.R.8692) authorizing the exchange of lands within the Montezuma National Forest, Colorado. The Roosevelt-Sequoia National Park Bill (H.R.5006) was also reached but its consideration was objected to by Congressman Smith (Idaho).

No Smoking: On January 13, Senator Smoot (Utah) introduced a bill to prohibit smoking in the Government departments in Washington as a preventative against fire. The bill excludes from its operations the Capitol and the Senate and House office buildings and also buildings rented by the Government in the District to house its bureaus. Fines and imprisonment are provided for violations of the law.

District 1 - Northern District

Grazing Receipts and Costs: As a matter of general interest the following figures on grazing receipts and cost of administration for the District have been compiled:

Fiscal year 1920

Grazing receipts	$199,345
Per cent of total receipts	33.6
Cost of administration	61,544
Per cent of total cost Stat. and G.E.*	6.8
Per cent cost of G.Ad. of Gr. Re.	30.8

*Total administration cost includes Stat. and G.E. only.

Missoula May Get Tie Treating Plant: On December 15 a conference was held in the Office of Forest Management with Mr. James Garrett, Chief Lumber Inspector for the C. M. & St. P. Railroad. Mr. Garrett visited Missoula to make a survey of climatic conditions which would have an important bearing in selecting the location of a treating plant. Precipitation and temperature records were furnished him and also a copy of a memorandum previously prepared for Mr.H.S. Sackett containing data upon the amount of timber suitable for ties in this region. According to Mr. Garrett the Milwaukee Railroad uses 3,000,000 ties annually but at present has no tie treating plant of its own, all work of this kind being done by contract, with the railroad furnishing the ties ready for the process. Half of the Milwaukee's tie supply comes from the Pacific Coast, the remainder from Michigan and Wisconsin. It will be the policy of the company to establish one or more treating plants in the west and Missoula is one of the logical sites.--C. N. Whitney.

District 1 - Northern District (Continued)

Marking Time: Assuming that Mr. Hurtt (Article in Bulletin Nov. 8, p. 6) is correct in his assumption that we are not making consistent progress in range management, and that the reason is because we are marking time, should encourage us to investigate and ascertain what is occurring in our Service to induce us to "mark time." Do we maintain an attitude of suspicion toward our official associates or are we trying to prepare for diplomatic positions at the expense of the interest that should be shown to the job. If so, the situation as outlined by Mr. Hurtt is the logical result and a continued reduction in the spirit of enthusiasm that is so essential to the growth and development of the organization may continue.

It is well to tighten up, but care should at the same time be exercised to prevent slipping into the rut, termed "marking time." Marking time, as I see it, is a parasite that is nourished and kept alive by a waning in spirit of enthusiasm due to impairing the initiative faculties possessed by the personnel of the Forest Service. It will no doubt overshadow official activities until we succeed in cultivating, through encouragement and constructive criticism, those latent talents.

Several reasons might be advanced as cause for the apparent lukewarm spirit toward putting good things into effect. However, it is believed that the primary reason is a lack of personal touch with the other fellow's problems. This has a tendency to cultivate the habit of "passing the buck," shirking responsibility. An honest spirit of cooperation and understanding by superiors induces the individual to believe that effort is appreciated and a feeling of confidence is manifest which is not the least of all essentials to a successful organization.

Many corrective measures are required in the physical administration of the National Forests. A recommendation to institute a change of practice in administration of the various activities should not therefore be viewed with alarm. In the event of a recommendation emanating from a subordinate officer it would be well to thoroughly investigate the circumstances which prompted it rather than to consider the situation with a view of challenging its merit. A challenge with any color of arbitrary tone will likely retard rather than promote progress.

Progressive cooperation of the right kind surely will assist in regenerating life into the grazing activities as well as others of no less importance and eventually reward the Service with exceedingly gratifying results. This is particularly necessary between the supervisor's office and the field force. The ultimate accomplishment of this requisite may render it desirable to consider smaller National Forest units rather than to encourage the tendency to increase the territory for which any individual is responsible.
--L. F. Jefferson.

District 2 - Rocky Mountain District

Ranger Meetings: The Pike Forest held a Ranger conference in Denver in December; the Black Hills held one last week; the Bighorn, Shoshone and Washakie will hold a joint meeting at Sheridan; the Cochetopa, Durango-San Juan, Rio Grande and San Isabel will meet at Pueblo; the Holy Cross, Leadville, White River and Routt will meet at Glenwood Springs; and the Minnesota and Superior at Duluth. The Forest Clerks, in addition to the officers included hitherto, will attend these meetings.

Administrative Handbook: Sometime in February an administrative handbook of District Forester, Operation and Accounts instructions similar to D-2 Forest Management handbook will be issued. All instructions compiled in this book are supplementary to those in the National Forest Manual and Fiscal, Administrative, and Property Regulations.

*****

"If you have a half hour to spend, don't spend it with someone who hasn't."

District 2 - Rocky Mountain District (Continued)

Grazing Authorizations: The total grazing authorizations for this District for the coming season are 571,495 cattle and horses; 1,615,635 sheep and goats, and 3,100 swine. This represents a decrease of only 1,832 C & H; 2,875 S & G, and an increase of 1,000 swine over the authorizations for 1920. It is expected, however, that the demands for range will be considerably less than a year ago and it is not thought we will make full use of the authorizations.

National Western Stock Show: The Denver Stock Show will be on from January 15 to 22 and promises to exceed all previous exhibitions in spite of the adverse conditions of the livestock industry at this time. It is reported that almost as many feeder cattle have been booked for sale as at previous shows. The price on this class of cattle at present is about as low as at any time during the year.

Mild Winter a Boon to Stockmen: Exceptionally good winter conditions have prevailed throughout almost the entire District and stockmen are getting by with much less of a feed bill than for some years past. If good winter conditions continue until spring, this will go a long ways toward helping owners to get back on their feet.

Promotions: Philip V. Woodhead, Ranger on the Pike, has been promoted to Deputy Supervisor on the Leadville; and Forest Assistant Brown of the Leadville goes to the Colorado.

Colorado Game Census: The annual game census for the fifteen National Forests of Colorado indicates that greater protection is necessary, and deer are far fewer in numbers than in some of the smaller eastern states. An accurate count is impossible, but since the work of the Forest Rangers requires that they spend much of their time in the regions occupied by the wild animals, a fair estimate is possible.

Several years ago, elk were brought in by the Forest Service, in conjunction with the Biological Survey and with the help of local organizations, and distributed to areas where only small bands were in existence and to localities where, many years ago, they were abundant but had been entirely exterminated. The elk have increased until the count now shows 5,640 animals within the State. The number on each Forest varies from 10 on the Leadville and Uncompahgre Forests to 1925 within the White River Forest.

The number of black-tailed or mule deer is 21,780 and of white-tailed 42. These latter all within the San Isabel Forest. There are still a number of antelope on the eastern plains and one lone one in North Park, but there are but 20 of which the Forest Service has record, these being entirely within the Pike Forest.

Mountain sheep now number 6,720, black bear 2,690 and silver tip bear 35. Beaver are decidedly on the increase as a result of many years of a rigid closed season and now number 38,100.

The so-called predatory animals, in spite of constant war made upon them, are far too numerous for the increase of game animals. The estimate gives mountain lions 740; gray wolves 190; lynx cats 6,965; foxes 2,455 and coyotes 26,485.

During the year just closed there were killed by individuals 963 deer, 172 bears and 132 beaver while those killed by predatory animals number 963 deer, 325 mountain sheep and 10 elk. The beaver were trapped under permit issued by the State Game Department.

The number of predatory animals killed by all persons other than officers of the Biological Survey was 29 mountain lions, 30 wolves, 579 lynx cats and 4,036 coyotes.

The number of fish fry placed in unstocked waters and in our much depleted streams, through the efforts of the Forest officers, from both Government and State hatcheries was 4,293,400. The results of such plants will never be what they should be until maturing ponds are established along all the streams.

District 3 - Southwestern District

Signs Per Thousand Acres: The following table will give a good idea of the extent of the sign work undertaken by the several Forests since the organization of the sign shop. It shows considerable discrepancies in extent to which the several Forests have availed themselves of the sign shop facilities. Of course, some Forests need more signs per 1000 acres than others, but those Forests having low figures should seriously consider whether their needs have been taken care of.

	Total No. Signs 1918-1921	No. Signs per 1000 A. net area
Apache	494	.40
Carson	703	.81
Coconino	585	.33
Coronado	416	.29
Crook	327	.37
Datil	540	.20
Gila	722	.48
Lincoln	905	.80
Manzano	317	.46
Prescott	415	.42
Santa Fe	2,168	1.58
Sitgreaves	449	.68
Tonto	571	.28
Tusayan	300	.23
B.P.R.	62	..
	9,144	.45
Plus 15% for requisitions covering more than one sign	292	
Grand total	9,436	

Santa Claus Comes to the D. O.: One minute the quiet purr of office routine, the click of typewriters, all the usual sounds of a business day in midwinter in the District Office. Then the squeak of an opening door and the thin treble of a childish voice raised in excited surprise filtered to the end of the string of offices: "Oh-h! Look at the tree!"

It was just the shock forces, the advance line, so to speak, of the assaulting waves of Forest Service kiddies that soon followed and automatically put the stop to all work for that Thursday afternoon before Christmas. The big white fir that tipped the skylight over the main hall was a glowing mass of electric bulbs, tinsel, colored balls and in addition, bravely bore a burden of 49 well filled stockings. "The Night Before Christmas" was read to the children by Miss Edna Williams of Grazing; Mr. Pooler gave a brief Christmas greeting to the office family; and then with a great jingle of bells, Santa came in. His big sack carried a package for every child there and as each gift was delivered a stocking was clipped from the tree to go with it.

It was a wonderful party; there never was such a tree; and we expect the party and the tree to be the illustrious ancestors of a long line of similar parties and trees in the years to come.

Speaking of Christmas Trees: The District Office's efforts to get trees this year for the city, institutions, and office members was one series of mishaps. The first truck sent out returned empty-handed due to lack of power on the hills. The second truck succeeded in getting a large yellow pine for the city but was unable, because of snow and mud, to get the many smaller trees needed. The third truck capped the climax by turning over in a blinding snowstorm up in the hills. Ranger Cook with his team and a wood hauler coming to town eventually landed the tree here for the Forest Service celebration held on the afternoon of December 23. Two Ford trucks also brought in a supply of pin trees for the office folks.

On December 16 to 19 Ranger Nichols was on duty at Spruce Mountain marking Christmas trees. He marked 74 for the Public Health Service Hospital at Whipple Barracks. These were practically all tiny ones to be used in the rooms of the patients who are too sick to participate in the Christmas celebration to be held in the wards. Miss Kappes, one of the Red Cross workers, stationed at Whipple Barracks, is making extensive plans for the entertainment and comfort of the sick. We are grateful for the dense growth of young firs on Spruce Mountain and help 74 of them gave toward the happiness of some of our ex-service men.--Prescott Bulletin.

New Lights on Ditch Digging: Probably everyone who has ever faced the unpleasant necessity of excavating a ditch has spent more or less valuable time in idle speculation or vain experiment looking toward an economy of elbow grease per unit of ditch dug. While installing a number of water systems during the past season, I found the following method of doing this class of work to be by far the most satisfactory of all those with which I experimented.

Select a well sharpened pick with strong, straight handle, and advance to the starting point of the ditch. Standing with the feet slightly apart, grasp the pick firmly in both hands and drive the point well into the earth. Repeat this exercise continuously for eight hours. At the end of this time--if you are still numbered among the quick--you will not have discovered anything with which to confound the engineering fraternity, but you will be surprised at the amount of ditch which is behind you.--Edgar L. Perry--Carson.

Investigative Work Holds the Stage: The District investigative force consisting of Messrs. Pearson, Haasis, Westveld, and Krauch is now in the District office and will be here for the next several months working on field notes of investigative projects that have occupied the time of these men during the past year or longer. In addition to old projects, the investigative plans for the future will be gone over and presented to the District investigative committee which holds its annual session shortly.

You Can't Keep a Good Forest Down: It appears from the articles in the Weekly Bulletin of November 8, under the heading "New Method of Felling" that Mississippi is 20 years behind the times since the "New Method" was used on the Tonto in the cutting of timber for the Roosevelt Dam.--Tonto Bulletin.

Ranger Wingo Bags Game Hogs: 'Verily the barnaclelike game hogs on the Weed District killeth much game and waxeth exceedingly fat, and Ranger Wingo's fawn crop falleth as if stricken by a plague. Then cometh the law, and so may it ever be.'

During the past hunting season four of Weed's most prominent citizens exceeded the bag limit and through fear of being exposed went to Avis about a week ago, pleaded guilty to killing three or four extra deer and paid the minimum fines. State Deputy Game Warden, Billings and Ranger Wingo are working on the case and evidence of a larger kill than reported may result.--Lincoln Bulletin.

Evergreens to the Lincoln: "The office force received a bunch of Evergreens from former Ranger Claud Parker, Asheville, N. C., Christmas week."--Lincoln Bulletin.

What, ho! The Lincoln must be in that reputed class of treeless forests of which the Tonto and Manzano are held up as horrible examples by their slanderers from time to time. For instance, some evil minded person, on the afternoon of the office Christmas tree party suggested that after we were through with it, that we return to the Manzano its fir tree.

Fire Tool Losses: Mr. Kircher has just compiled figures on losses of fire tools, to determine whether the adoption of special designs would justify the additional cost by decreasing chances of theft. His figures show that during the past two years the total losses for each class of tools, inclusive of losses at fires, through breakage and through wearing out as well as through theft, has varied between 2% and 4%. This is a very reasonable loss, and would by no means pay the cost of special designs. It may therefore be safely and finally concluded that special design fire tools would not pay from a loss-prevention standpoint.

District 3 - Southwestern District (Continued)

Night School Schedule, D-3:

Jan. 4 - General Principles of Silviculture - Ancona
Jan. 7 - Silvicultural systems - - - - - - - - Shepard
Jan.11 - Wood Technology - - - - - - - - - - - Krauch
Jan.14 - Forest Mensuration - - - - - - - - - - Marsh
Jan.18 - Forest Mensuration, Scaling - - - - Randles
Jan.21 - Forest Mensuration, Appraisals - - - Lang
Jan.25 - Chapman's Coconino Yield Study - - - Marsh

W.J.P. Hands One to Paul: Whereas; at divers time we had heard a disquieting rumor that somewhere, sometime, somebody had marked in one day 900 trees and, whereas; There had this long time been gnawing at our vitals a consuming curiosity to know whether this was a stray Paul Bunyan story, or whether the feat had been, could, or would be done, and, whereas; We have never been accustomed to yell "wait for me" on a hike, and usually know what tree we will mark before we get there and, Whereas; We had a deep-rooted feeling that if someone else had done this thing we could do it also, we Resolved; To take our tally register and try it a whirl, and--we saw the bet and raised it 260. Actual working time 7 hours, 45 minutes. Therefore; we are convinced she can be done, but should not be taken as a regular diet, and Further; We would not advise the attempt by anyone afflicted with Stringhalt; Flat Feet; Georgedoitiveness; Asthma; or Chronic Swivelchairitis. Hang 'er up another peg!--W.J.P. H.&H. Sale-Carson.

Roundup Brings Results: Mr. Grubb returned on December 12 from a week's work with the Live Stock Sanitary Board Roundup on the Whetstones. As a result of the work, Sam and Frank Gibson, Forest permittees, have been bound over to the Superior Court on the charge of cattle stealing.--Coronado Bulletin.

High Finances: Some financier in charge of the Huachuca District! A grazing permittee who up to a few days ago was still a delinquent was induced by Ranger Rodgers to mortgage her corn crop and remit the fees with the money obtained, thus avoiding trespass proceedings.--Coronado Bulletin.

Justifiable Homicide: Doubtless most Forest officers have noted in the newspapers the account of the killing near Bly, Arizona, of Charles Quayle, a rancher, by Ranger Fred Croxen of the Bly District of the Coconino. This office has refrained from comment, until the facts in the case were known. Mr. Brothers has just returned from Winslow and Flagstaff where he represented the District Forester at the inquest. We are very glad to be able to inform the field that the verdict of the Coroner's jury of justifiable homicide exonerated Ranger Croxen completely. A formal complaint of murder filed by Arthur Quayle, a brother of the dead man, will result in a preliminary trial at Flagstaff on January 22. Croxen was released on $2,500 bond.

The inquest disclosed the fact that Quayle had made previous threats to "get" Croxen and that on this instance when Croxen called at the ranch to take his grazing application, Quayle intercepted him on horseback when he was leaving and launched into an abusive and threatening verbal attack at the termination of which he apparently made a move to draw his gun. Croxen beat him to it and shot Quayle from his horse. But slightly wounded, the latter tried to pull a rifle from his saddle scabbard upon which Croxen fired two more shots that proved fatal.

A Washington Visitor: Mr. J. P. Preston of the Washington office of the Western Division, Forest Management, has arrived in the district for a stay of approximately a month. While here, Mr. Preston will visit the Coconino Plateau timbered areas, also the Lincoln and Carson Forests. The main objects of his trip are to become acquainted with the various forest types of the region and also to get in touch with the progress and conditions on some of the larger sales of the District.

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The two things which make for the success of a news item or a story are, (1) to start off right, and (2) to know when to stop.

District 4 - Intermountain District

All in a Day's Work: Extract from Ranger "Sunny" Allan's diary for November 5, 1920, as written by Foster Steele.

To delve into the bowels of the earth after bear, while exciting and requiring no little amount of courage and determination, is, nevertheless, only a mere incident in the day's work of a busy ranger.

November 5, 1920

7:00 A.M: Left headquarters on horseback for trip over my east end.

9:00 A.M.: Met bear hunter with pack of hounds. Fell in with hunter and hounds and continued on.

9:30 A.M.: Came across large, black, track of a bear. Followed same to mouth of cave leading back into mountain side.

10:00 A.M: Entered cave on hands and knees, flash light in mouth, bowie knife in belt, automatic grasped firmly in right hand. Pulse normal, temperature normal, heart action good, followed by hunter and hounds in like manner.

10:02 A.M: Entered long, high, narrow chamber just wide enough to permit me and my brave followers to proceed in single file. Followed passage about sixty feet, came to declivity in ceiling which required the all-four method of procedure.

10:10 A.M: Entered second chamber about the size of first. Marked time here in single file. Flashlight beginning to show signs of weakening. Sounds of deep breathing coming from regions to our left; dogs becoming unmanageable. Pulse flighty, temperature subnormal; heart action disgraceful; strong impulse to about face and beat it.

10:15 A.M: Sounds from chamber to left becoming more pronounced as if coming from a conscious and wakeful animal. Flashlight expires. Total darkness, pulse racing; temperature down to freezing; no heart action worth mentioning. Hunter in same condition only worse. Dogs squeeze by and rush in a foolhardy, headlong manner into chamber. Great commotion and sounds of heavy blows striking soft bodies.

10:17 A.M: Hunter and I facing north in single file; total darkness punctuated by sounds of tumult. Suddenly struck in solar plexus by an all-impelling, large, black, growling, clawing, rapidly moving force. Hunter meets like fate. The above described force passes over us, followed by the hounds in hot and noisy pursuit. Pulse shakey; temperature below par; ice cold perspiration; hair standing at attention, heart on strike.

10:20 A.M: Regained reasoning faculties to some extent and guided by instinct followed course taken by bear and hounds. Proceeding in total darkness; ran into bear stuck in outer chamber and suddenly realizing our opportunity for revenge we proceeded to pass over him in much the same manner as he had passed over us.

10:21 A.M: Reached mouth of cave closely followed by the bear thirsting for revenge. Daylight and fresh air brought us back to normalcy and a high regard for Republican doctrines, especially those pertaining to protection and self preservation. One well aimed shot from my trusty automatic, which I found still grasped firmly in my right hand, sent Bruin to the mat for the count.

11:30 A.M: Finished skinning the bear and started for home.

5:00 P.M: Arrived at headquarters.

Note: Ranger "Sunny" Allen would have made a worthy companion for Frederick Gerstaecker, a young German hunter-author, whose exploits after bear in the limestone caves of Arkansas not far from the Ozark Forest region, in 1842, form the most hair-raising chapter of his exceedingly interesting volume entitled "Wild Sports in the Far West." Gerstaecker, according to his account, which appears to be authentic, followed a bear and her three cubs into a cave and through passages so narrow that the sides had been worn smooth by the passing in and out of wild animals, and so low that at times he was obliged to drag himself forward on his stomach. He had a torch instead of a flashlight, but this was for a time extinguished by falling into a pool of water at a very critical juncture. He wounded the bear with a shot from his muzzle loading rifle, but dropped the weapon in hasty retreat from the frenzied animal, he and his companions saving themselves by placing crosswise in the passage burning splinters from the torch. These the bear feared to pass so long as they continued burning. Finally the wounded bear turned into a side passage, when Gerstaecker returned for his gun, reloaded it, and overtook and killed her. He and his companions entered the cave about four o'clock in the afternoon and came out about two o'clock in the morning, so covered with blood and blackened with smoke as to be almost unrecognizable. Fiction is always outdone by fact.--E.A.S.

Inspector Holman Gives Talk: Mr. George E. Holman, Inspector in charge of the Biological Survey for Utah gave a very interesting talk to members of the local office and the Ranger force on the extermination of predatory animals in the State. Based on the statistics given by Mr. Holman, there has certainly been a marked decrease in the number of predatory animals in the State, particularly coyotes, wolves and lions since the organized campaign against predatory animals was initiated.

State Federation of Fish & Game Assns: There was a meeting held in Salt Lake yesterday of the representatives from the various fish and game associations throughout the State to consider the organization of a State federation of such associations and to discuss desirable provisions in the game law. Ten of the fourteen associations in Utah had representatives present. Discussion was made concerning proposed changes in the game laws and it was decided to form the State federation as rapidly as possible. A committee of five was named to represent the various associations in connection with proposed legislation by the State Legislature and to perfect plans for the State federation.

Big Power Plant Project: Considerable interest has been evidenced in Moab in the plans of the Southern California Edison Company which recently filed an application for a power plant on the Colorado River. The erection of a dam 1,000 feet high at Lee's Ferry is planned. Such a dam would back up the water of Grand River as far as the mouth of the little Dolores River at Dewey, 40 miles above this place, raising the waters of both the Grand and Green rivers to the elevation of 4,280 feet whereas the elevation of Moab is 4,050 feet. The purposes of the project are to provide the greatest power plant in the United States, furnish water for the irrigation of 3,000,000 acres of arid land and control the flood problem of the Colorado River. It is believed it will take an indefinite period to carry the plans to completion so there seems to be no immediate necessity for building an ark or picking out hilltops upon which to live.--La Sal News Letter.

Forest Officer's Housing Problem: An interesting decision by the Land Office has been recently reported by the Grand Junction, Colorado, paper. It was held that a homesteader may claim residence on his land even though temporarily he is housed under the limbs of a tree. It was held that good faith was shown by erection of a cabin later and that the establishment of residence dated from the time the homesteader went on the claim and lived under a tree. This may suggest a way to solve the housing difficulties of various Forest Officers who have experienced trouble in that line.--La Sal News Letter.

Soc. of American Foresters: The Intermountain Branch of the Society of American Foresters held a meeting in the District Forester's office January 11, at which 29 were present. Mr. Winkler spoke on the subject of "The Practical Application of our Grazing Management Plans" and Mr. Woods spoke on the subject of "Consideration of Local Interests in Grazing Administration." Much interest was shown in the subjects and a good discussion was had.

District 4 - Intermountain District (Continued)

Confessions of a Tenderfoot: On Friday, March 19, 1920, I finished my daily duties at the N-C-O Ry., general offices at Alturas preparatory to leaving that place to accept the position offered me by the Forest Service. Sometimes I wanted to make the change, sometimes never, but I had always had a desire to be in the Government work. The iron was hot. With a little encouragement from others, I "struck" and I am glad, for it seems there is always something to learn in the Forest Service work.

The following day was the beginning of my new tasks at a new desk with new people and for an organization new to me. Immediately, Grazing decided to initiate me by "popping" a letter as I struck the keys of the typewriter. This was entirely a new feature to me, for I always took down dictation on the Stenotype Shorthand machine. Shivering and holding my breath the "yours truly" was finally reached without a mistake (Maybe). A very large sample of all the most difficult duties were tried out the first week, it seemed, but one time was as good as another for introductions of any kind to me.

Surely no person ever appeared "greener" upon entering new duties. My father being a railroad man, I had a fair understanding of railroad terms, abbreviations, etc., before entering the Auditor's office, but--this filing system and every other thing is so different to railroad work.

During the month of April, Mr. Dechant appeared on the scene, for the purpose of conducting a homestead hearing. When asked to take the evidence in the case, although lacking in confidence, I decided to do the best possible; because nothing can be accomplished unless attempted. I never felt colder on a winter day with it 35 below zero than I did that PRETTY day in April. Which was the weaker-kneed, the claimant or myself? Who wants to know? Just ask someone else, please, for I am ashamed to admit such a weakness.

The next thing to make me feel as a Quaking Asp was the Civil Service Ex. for Stenographer and Typewriter. Each evening at home, some of the family were imposed upon to recite some literary article or articles in order that I could bring up my shorthand speed to 130 per. The night before the date set for the examination, I cried nearly all the time (all babies cry) and next morning did not feel quite like looking out of my eyes. The General Manager of the N-C-O told me not to worry about the examination that I would pass it all right. The next morning as I walked to work, I met him on the street and when he asked how I was feeling for the "great event about to be 'pulled off,' I was so glad that the hat I was wearing had a very broad brim, that the sun was shining in his eyes, keeping him from seeing mine. A few minutes later, cold shivers began anew and kept up until the last paper was handed in. How much better my competitor and I both felt when the last words were written in answer to the last question--then I was all right and my eyes were swollen no more.--Miss Hawkins--Modoc.

District 5 - California District

Swift Berry, for the past some time with the Treasury Department, has resigned to become the California representative of Hall, Kellogg & Company. It is understood that Berry will handle for the Company all Land Exchange work and their general business in the purchase and sale of timberlands within the State.

Not His Head, But His Leg That's in "Concrete": "I want to express my sincere appreciation of the many cheering and sympathetic notes I have received from my friends in the Forest Service since I have been 'down and out' and of the kindly attention received from members of the District Office. Believe me a hospital is a cheerless institution at best! My experience with hospitals has fortunately been very limited in the past for which I am now duly thankful.

"The doctors have had some trouble with my fracture and have caused me to groan, grunt and cuss quite a bit, but they now have the leg in 'concrete' and claim that in a couple of months I will have good use of it again. I certainly hope so for a man in the Forest Service with a bum leg is 'out of luck'. It will probably be quite a while, however, before I shall be much of a pacemaker on a hard hike."--T. D. Woodbury.

Alibi Ike Breaks Into Print! All kinds of reasons are offered for loss of Forest Service property, fire and theft being the principal offenders. A new "alibi" came along the other day when "pack rats" were accused of being responsible for the loss of certain equipment that cannot be accounted for.

And another ranger lost a certain small article on the floor of his station barn and "after making thorough search for over an hour, was unable to find same." Some clean barn, we'll say. Next!

"Pep"! "A Happy New Year" writes District Ranger Harry Hunt "to all the Forest Service family at Santa Barbara.

I returned this morning at 8 A.M. better pleased with my work, (I almost said 'job'), than I have ever been. My little time of annual leave was a howling success, and made me hungry to get at my work again.

My desire, (I have quit making New Year resolutions), is to make the year 1921 the best year of my Service life. And it's no small task ahead. I will tell you more about it all throughout the year."

An Appreciation: "Permit me," writes Mrs. Bertha E. Roberts, Deputy Sup't. of San Francisco Public Schools "to extend the thanks and hearty appreciation of the Board of Education and the Superintendent of Schools for the splendid educational exhibit which was recently held at the Public Library. Please know that the Board of Education and the Superintendent wish to continue their cooperation with the Forest Service."

District 6 - North Pacific District

Super-Squirrels and Cone Collecting: Are the squirrels on the Minam Division of the Whitman Forest wiser than those in other sections? Why do they throw pine, Douglas fir and white fir cones into creeks? How great a distance can they throw a cone with accuracy? Why shouldn't this habit of the Whitman squirrel be made use of in collecting cones?

The writer has observed the nimble rodents during their harvest time in many sections of the North Pacific District, but so far has observed their habit of throwing cones from trees into streams only upon the Minam Division of the Whitman Forest. Scores of bushels of cones were found to be damming the creeks and the water was so rank with pitch and tannin that milk curdled in coffee made with this water. After soaking for several days the cones were taken from the water by the squirrels and stored in caches as usual. The cones at this stage appeared much brighter than when harvested and were almost free from pitch. From trees growing within 20 feet of the creek practically every cone was cut from the limb and flipped into the stream; the cones were not dropped but were tossed with unerring aim.

The suggestion is made that a few pairs of these super-squirrels from the Whitman be caught and trained to throw the cones into seed-sheets spread beneath the trees, or even into wagons driven from tree to tree! In this way the Ranger, who is now made the 'goat' when he turns in a good seed crop report, would merely drive the team and direct, by whistles or motions, the work of his bushy-tailed pets, thus letting Nature play an even larger part in reforestation!--C. J. Conover.

Denny Creek Camp Grounds: These improved camp grounds along the Sunset Highway, on the Snoqualmie Forest, proved extremely popular during 1920. By actual signatures in the registry booth 35,000 tourists signed their names during 1920, and if the usual figure of one in five registering is taken, 175,000 people probably visited these camp grounds, or 2½ times more than visited Yosemite National Park in 1920, and some 25,000 more than visited Eagle Creek Camp Grounds on the Oregon Forest in 1920.

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Be of courage; that is the main thing.--Thoreau.

News items are c[illegible] ther commodities, they must satisfy the demands of the purchaser, who is, in the last analysis, the newspaper reader. To this end, newspaper editors have evolved certain rules governing their output, and to achieve success--namely, publication-- the press agent must follow the editor's rules, which really means that he must satisfy the reader. These rules are simple to express and difficult to follow.

A news item is a bald statement of events, happenings, incidents. It is dynamic rather than static. It describes a movement, and contains stationary facts only in so far as they are necessary to understand the movement of events. For example: it is news to say that John Smith, forest ranger, broke his leg; it is not news to say that John Smith has an unbroken leg.

With the preliminary definition always in mind, the following rules should be adhered to:

Appeal. Every well-written news "story" contains the most salient event in the first sentence, and as near the beginnings of that sentence as possible. This is a device to catch the reader's eye--in other words, to sell the story. It is poor salesmanship to write that "On May 5, while riding with a cowpuncher on Windy Mesa, John Smith, forest ranger, discovered a forest fire" instead of "A forest fire has been put out on Windy Mesa, after having destroyed a thousand acres of timber, etc."

Timeliness. A story must be timely. For that reason, as a rule, no news items, except telegraphic ones, should contain dates.

Local Interest. The interest of a news story usually varies inversely with the distance from the event. A Californian is not interested in the fact that John Smith of Bangor, Maine, broke his leg, or that the peach crop of Delaware has been frost-bitten.

Simplicity. There is no room in a modern newspaper for anything that savors of "fine writing." The use of adjectives should be held to the minimum. Bald, simple narrative is all that is desired. The attraction comes from the events portrayed and not from anything described. Simple narrative should move swiftly and should be stripped of all verbosity.

Perspective. A great battle receives a column; lesser events should be dealt with in proportion. The perspective is determined by the reader's interest rather than by the writer's. Newspapers will not publish "shop-talk." It is shunned as much in the newspaper office as in the drawing-room and for the same reason--it is boresome.

Opinion. A news story should be frigidly impersonal so far as the writer is concerned. It is a record of events, not of opinions, judgments, feelings, or static facts, however true or important they may be. It is news to say that "A forest fire has destroyed a thousand acres of timber," but it is not news to say that "Forest fires are terribly destructive." The expression of opinion in news colums is wholly inadmissible except as a direct or indirect quotation; and even so, the quotation itself must be timely, simple and unverbose.

Propaganda. If the press agent wishes to have his stuff printed, he will do well to conceal his real object, namely, propaganda. Newspapers conduct their direct propaganda in the editorial columns. Any propaganda in the news columns must be indirect--it must consist of a narrative of events from which the reader draws his own conclusions. Consequently, the press agent's art consists in seizing upon real events and narrating them in such a way that the reader grasps their significance without feeling that he is being exhorted. It is perfectly true that campers ought to be careful with their camp-fires, but the way to tell them to do it through newspapers is to say that "John Smith was fined $10.00 and costs for failing to extinguish his camp-fire,"etc. News-propaganda is a sugar-coated pill, and the medicine should never be evident to the taste.

Self-Praise. An absolutely fatal element in news-propaganda is self-praise. It is suicidal. It is the cardinal sin in the art of self-advertising. The remotest suspicion of it should be shunned by the press agent. Unquestionably the Forest Service is doing a great and vital work, but the statement of that fact should be left absolutely to outsiders. A news-story is a fable without a moral.

Six Questions: Every news item should answer the six questions: Who, What, Where, When, How, Why. The order in which they should be answered will vary with each case. Put the salient and startling facts in the first paragraph or lead, and generally in the first sentence of the first paragraph. Then proceed with the balance of your "story."

SERVICE BULLETIN

U. S. Forest Service

Washington, D. C. - January 31, 1921.

(Not for Publication)

DEPARTMENT OF AGRICULTURE CLUBS

The movement recently started for the establishment of clubs in all cities where several Bureaus of the Department of Agriculture are located is meeting with great success. To date clubs have been formed in New York, San Francisco, Portland, Ore., Denver, Albuquerque, and Birmingham, Alabama.

Report of the Denver Club meeting on January 6, transmitted to the Secretary, outlines proposed activities, the most important of which are: organization for lecture work; uniform method of listing Bureaus in telephone directories; attendance of representatives at important conventions, and the preparation of a statement regarding the various branches of this Department in Colorado and a brief description of their activities, for distribution at the National Western Stock show, Denver.

Assistant to the Secretary F. R. Harrison in a letter to Mr. A. Lincoln Fellows, Chairman of the Club states:

"*** I am deeply interested in the work of the Club and I am very glad, indeed, to have the privilege of reading the documents which you enclose. They clearly show what an organization like yours can do in the way of bringing about closer cooperation between the various branches of the Department in Denver, and I am sure that it will prove to be highly beneficial not only to the representatives of the Department but also th the Department itself.

"I shall take the liberty of bringing your letter and its enclosures to the Secretary's attention. I know that he will be very much interested in reading them. I shall also send copies to the chiefs of the various bureaus so that they may know just what the Denver Club is doing."

The Luquillo National Forest

By E. Murray Bruner

(Forest Supervisor and Forester of Porto Rico.)

The Luquillo National Forest covers the crests and upper slopes of the Luquillo Mountains situated in the northeastern part of Porto Rico. The main Luquillo Range occupies the central portion of the Forest throughout its length. The Forest embraces the headwaters of numerous streams which furnish water to practically all the towns of the northern section of the Island.

The total present area of the forest is something like 15,000 acres. All boundary lines have been marked out and concrete monuments placed at every corner or intersection. It is not believed any other National Forest has been so thoroughly surveyed and carefully marked.

In spite of its relatively small area, the Luquillo Forest is by far the largest body of woodland in Porto Rico, and the only area of material size which remainsto-day in its pre-Columbian condition.

General Description

The Luquillo Range, while actually not so high as the Cordillera Central, presents a much rougher topography, and may, therefore, truly be considered the more mountainous. Its slopes are very steep and often precipitous. In many cases the streams have cut deep narrow gorges through the rock, while again the water courses are broken by the frequent occurrence of cascades or series of falls, which in some cases make a descent of some 1,500 or 2,000 feet within a horizontal distance of not more than two miles. The combined water power of these streams must be very considerable and undoubtedly will eventually be fully developed and utilized.

Because of the exceptionally difficult accessibility of the Luquillo Mountains they remain to the present time a practically unexplored region in so far as the public is concerned, although completely surrounded by a densely populated area. In the native mind this region is regarded as a land of mystery and wonder, the dwelling place of the spirits of mighty "Caciques" or chiefs and other great personages.

The Forest Growth

The forest growth is made up of a great variety of tropical and subtropical hardwoods, though the most important timber trees are confined to a comparatively few species. For convenience the Forest is considered as divided into "types" or classes in accordance with the character of the forest growth in different situations. Four general types have been recognized, viz., "cove," "slope," "sierra palm" and "dwarf forest."

The cove type is confined to narrow strips along the streams where the deepest and best soil is found. Naturally the largest individual trees grow in this type, but it occupies not more than 5 per cent of the total area.

The slope type covers the lower and middle slopes just above the cover. It is within this type that the bulk of the timber of merchantable quality is found. It comprises about 30 per cent or roughly one-third of the Forest.

Above the slope comes the sierra palm type covering about one-half or 50 per cent of the entire area. It takes its name from the fact that the sierra or mountain palm is its prevailing species.

Finally, covering the mountain peaks and crests of the higher ridges, is found the dwarf forest type. The stand is an exceedingly dense growth of brushy or bushlike trees seldom more than 18 or 20 feet and more generally under 10 or 12 feet in height.

Commercial Values

Considering the Forest as a whole, it does not have a heavy stand per acre of species of high commercial value. In the aggregate, however, the amount of such timber is not inconsiderable, while the amount of timber of more inferior quality is much greater. In addition to the material suitable for timber there is a still larger amount suitable only for fuel and especially for charcoal manufacture.

To open this Forest to ordinary lumber exploitation could not be considered good public policy since it would result in the complete removal of the merchantable stand in a comparatively short time. It is believed any plan of exploitation of the forest growth should provide that this be done only through the development of some small but permanent industry, as furniture and novelty manufactured with proper facilities for the utilization of the cheaper material. Any possible utilization of the forest growth, however, must await the development of transportation facilities.

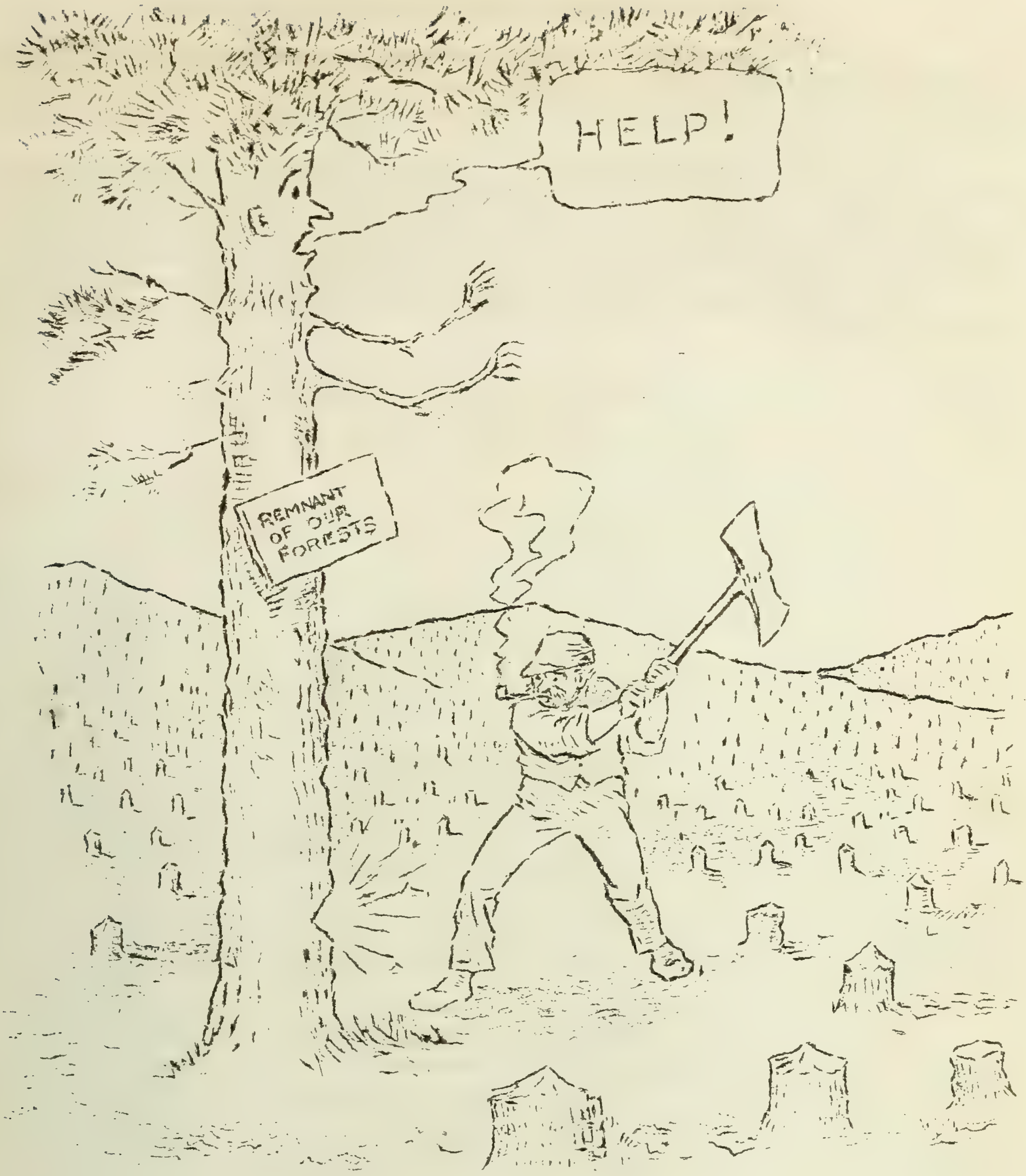
Public Benefits Derived from Forest Cover

Far outweighing in public importance any possible commercial timber values are certain incalculable benefits derived from the Forest by reason of its protective influences upon soil and streamflow. The Luquillo Range is entirely surrounded by exceptionally fertile coastal plains and river valleys. The agricultural development of these lands has reached a very advanced state, and particularly with respect to sugar cane and tobacco-growing industries. Radiating in all directions, the many streams rising within the Forest have cut their channels through and across these rich agricultural lands. The regulation of the flow of these streams is obviously of fundamental importance to the agricultural development of the lands through which they flow.

The annual rainfall of the Luquillo Forest region is by far the heaviest in the Island, averaging something like 140 inches and sometimes reaching almost 170 inches. A very considerable part of this rain comes as exceedingly heavy downpours. It is in relation to this very high annual rainfall that the Forest exerts its greatest influence. Falling upon open or deforested lands such torrential rains could not fail to produce disastrous soil erosion and destructive flooding of the streams.

Value for Recreational Uses

In Porto Rico there are no public mountain recreational grounds. Throug the proper development of the Luquillo Forest the Island can have a unique and most valuable resort, open to all who may wish to come and enjoy it. It would be difficult to find anywhere another area of similar size more abounding in beautiful streams or enriched with a more varied and interesting plant life. Wonderfully inspiring are the views which may be had from the mountain peaks towering above the forest-covered slopes and looking out upon the broad expanses of the great Atlantic.



"THE WAIL OF THE LONESOME PINE"

--By Knott--in Dallas News.

The Luquillo National Forest (Cont.)

Plans for Future Development

A comprehensive program for the ultimate development and utilization of all the more important resources of the Forest, actual and potential, is being gradually worked out. A complete system of trails for travel on foot and by horse is in progress, and when completed will make all sections of the Forest accessible. Some twenty miles of carefully laid out trails have been built up to the present time. These are now open to travel on foot, and will, as the need arises, be put in proper condition for horseback use.

Coordinated with this trail program is a plan for road construction, but, which, because of the heavy cost involved and other practical difficulties must necessarily be much slower in development. Once this connection between the Forest and the outside world is made there need be no fear about the development of recreational resources such as the stocking of the streams with fish, the opening up of desirable camp grounds, encouragement in the building of hotels, and any other conveniences necessary for the public use and enjoyment of the Forest.

Newspaper Proposes Forest Policy for Wisconsin

The "Milwaukee Journal," which for more than a decade has consistently supported the cause of forestry, has recently started a movement for a thorough-going State forest policy in Wisconsin. The proposed program is briefly as follows:

"Plans to make idle acres work; to grow lumber and forest products urgently needed; to provide pulpwood for making paper; to give a permanent basis to Wisconsin's wood-using industries; to conserve and regulate waterflow; to increase the supply of fish and game; to enhance the beauty of our native landscape, and to attract in much larger numbers tourists and summer visitors."

The Forest Service is cooperating with the Journal in the furtherance of this movement.

OUT AMONG THE BIG THINGS

By Arthur Chapman

(Author of "Out Where the West Begins.")

Out among the big things-
   The mountains and the plains-
An hour ain't important,
   Nor are the hour's gains;
The feller in the city
   Is hurried night and day,
But out among the big things
   He learns the calmer way.

Out among the big things-
   The skies that never end-
To lose a day ain't nothin':
   The days are here to spend,
So why not give 'em freely,
   Enjoyin' as we go?
I somehow can't help thinkin'
   The good Lord means life so.

Out among the big things-
   The heights that gleam afar-
A feller gets to wonder
   What means each distant star;
He may not get an answer,
   But somehow, every night,
He feels, among the big things,
   That everything's all right.

Washington Wool Growers' Meeting

By E. N. Kavanagh, D-6

The Nineteenth Annual Meeting of the Washington Wool Growers' Association was held at Spokane, Washington, January 6, 7 and 8. Contrary to the usual practice at livestock conventions there was no program, no set speeches or addresses; the business of the convention was accomplished through the medium of committees. All the representative freight agents of the northwestern railroads were before the Railroad Committee and promised a substantial reduction in rates to and from summer ranges, a matter of prime importance in connection with the use of forest range in Districts 1 and 6. The railroad men also promised hereafter to furnish alfalfa hay at unloading points en route to eastern markets instead of straw and poorer qualities of hay, also to allow two men to travel free with each five-car shipment to and from summer range instead of one for ten cars as during the past year, and, further, to allow 10 days' time at market points to shippers instead of three. Questions as to minimum carload weights, inter-railroad shipments and several other matters were taken under advisement.

Washington Wool Growers' Meeting (Cont.)

The Association secured a reduction of 25 per cent in grazing fees on Northern Pacific lands from the representatives of that railroad. The initiation of experiments and investigations by the State College of Washington, preferably in cooperation with other agricultural colleges in adjoining States, to determine better methods of range management, the grazing value of different classes or kinds of range and classes, kinds or types of sheep best adapted for general range use on these various ranges and simple but efficacious remedies for sheep diseases was endorsed. Likewise a request for an increase in State and Federal appropriations for the destruction of predatory animals and rodents.

Definite agreement was reached to cut herding and shearing expenses and to limit wages to $75 as a maximum for herders, 10 cents per head for blade shearing and 12 cents per head for machine work. A resolution requesting a reduction in assessment values for taxation purposes on sheep was adopted. They also agreed hereafter to discourage the promiscuous bidding for choice areas of private or Indian Reservation grazing lands.

The Association as a whole was optimistic, and instead of wasting time bemoaning their lot in this reconstruction period quickly got down to business and proceeded to eliminate all the inflation in their own industry. The various sources of increased cost of production were studied and wherever possible remedial action to reduce such costs taken.

The Association and its members work in close cooperation and harmony with the Forest Service. Every application for sheep range on the Washington forests was considered and acted upon by the Advisory Board.

Twelve of the wool growers appeared before the Convention in all-wool, tailor-made suits costing about $49 each made from cloth woven at an Oregon woolen mill and which cost only $14 per suit, the $35 difference representing findings, buttons, labor, etc., furnished by the individual tailors. Such suits (if you could get them) in retail clothing stores would cost from $85 to $105.

Cooperation with this Association is a pleasure and an inspiration. How they feel toward the Forest Service is indicated by the following resolution:

"WHEREAS, officials connected with the United States Forest Service have cooperated with and assisted the permittees on the National Forest in securing the greatest benefit from their permits, and

"WHEREAS, the Forest Service is of great benefit to the stockmen,

"THEREFORE BE IT RESOLVED, that we extend our thanks and appreciation and that we pledge our fullest cooperation with them to our mutual future advantage,

"BE IT FURTHER RESOLVED, that we renew our pledge to cooperate with the Forest Service in the protection of game and other wild life that is not predacious, pledging the members of this Association to cooperate in every reasonable way in the protection and care of the National Forest,

"BE IT FURTHER RESOLVED, that we recommend the establishment and enforcement of rules relative to the handling of sheep by herders and camp tenders on all ranges used by members of this Association and the suitable recognition by the Forest Service when satisfactory services are rendered by such herders and camp tenders."

Be Frank

What do you read in the Bulletin--the long articles, the efficiency and administrative "dope," or the human interest stories and short news items? How much of what you read do you digest and put to use?

This is primarily a publication for field men, but how am I to make it interesting when 99.9 per cent of you fellows never lift a pen (or pound the typewriter) to help along the game?

I would like to see the field men voice their opinions and tell their experiences through these columns. You write for your District publications--why not for the Service Bulletin?

One lone officer has written me his opinions on the Bulletin--what of the other 2,632?--Editor.

The Protection and Improvement Problem

By Frank J. Jefferson--Selway

In McHarg's article regarding the Coeur d'Alene-St. Joe group in the Bulletin of October 26, 1920, he makes mention of the fact that no measure is indicated for fire suppression or improvement work accomplished.

Since the major work on the Selway is fire suppression and improvement, an outline of the organization and production of a Forest of this type may furnish the information which Mr. McHarg lacks.

It is to be understood that the entire organization is being measured, in terms of Fire and Improvement. We sell some timber, have a small grazing business, and a sprinkling of the other activities. In this article the cost and time involved in handling these other activities is thrown in for good measure, as Mr. McHarg does with Fire and Improvement on his group Forest.

The Yearlong Organization here is as follows: 1 Forest Supervisor, 2 Fire Assistants, 1 Forest Clerk, 1 Assistant Clerk, 5 District Rangers; total 10.

Note: 55 per cent of total time of the first three men is spent in the field.

The division of overhead between office and field is as follows: Field--5 Rangers plus 1.65 from Supervisor's office, 6.65; Office--3.35; Total 10.00.

The temporary organization in the field is as follows: Smokechasers (including all temporary men not otherwise classified) 31, Lookouts 9, Packers 10, Teamsters 1, Truck Drivers 1, Supply Clerks 1, Blacksmiths 1, Foremen 7, Cooks 7, Laborers 60; Total 128; Gross increase for fire 12; Maximum 140.

The ratio of the yearlong to the normal temporary organization is therefore 1 to 13; at the height of the fire season it was 1 to 14. This ratio could have been increased had it been necessary, possibly as high as 1 to 20.

The ratio of field overhead to temporary employees is respectively:

Forest:	Normal	1 to 19.2	Ranger:	Normal 1 to 25.6
	Height of season	1 to 21.5		Ht Season 1 to 28
	Possible increase	1 to 25		Poss. Incr. 1 to 35

Experience has shown that when the Forest field overhead ratio exeeeds 1 to 25 the temporary addition of a qualified Forest Officer is a profitable move.

The temporary organization here is divided into 27 units. The ratio of Ranger overhead to these units is 1 to 5.4. The ratio of Supervisory field overhead is 1 to 16.4.

The average Ranger time required for an inspection trip to one of these bases is 3.5 days, allowing one day at the base for inspection and instruction. By group inspection this is reduced to 2.5 days per camp or 13.5 days for a complete inspection of the average Ranger District.

The average Supervisory overhead time required for the same inspection is 6.8 days for a special trip to the average camp, allowing one day at the camp. Such a trip is rare. On group inspection the time required per average district, allowing one day at each camp, varies from 2.3 days per camp or 12.4 days per district for the most accessible district to 4.2 days per camp or 22.7 days per district for the most remote. A complete inspection trip over the Forest, visiting each of the 27 bases requires a minimum of 60 days. In actual practice, allowing for lost time and side trips, 90 days would be closer to the true figure.

The accomplishment of the indicated organization, in addition to sales, grazing and other current work, during the field season of about four months, was as follows: Suppression of 157 fires; construction of 4 buildings, 4 bridges of 44' to 75' span, 32 miles telephone line, 36 miles graded trail, 7 miles ungraded trail; reconstruction of 14 miles graded trail, 12 miles telephone line; maintenance of 200 miles telephone line, 316 miles trail, 5 bridges 22 buildings.

The ratio of performance per man during this period was as follows for the three major lines of work:

The Protection and Improvement Problem (Cont.)

	*Fires Suppressed	Construction or reconstruction miles		Maintenance miles	
	No.	Tel.	Trail	Tel.	Trail
Field o'head:	23.7	6.6	8.6	30.1	47.5
Ranger force:	31.2	8.8	11.2	40.	63.2
Reg.Temp.Org:	1.2	.34	.44	1.6	2.5.
Laborers and: foremen only:		.66	.85	3.	4.7

*Average acreage 51.4, average damage $43.20.

In this schedule of performance every man in the organization is credited with a definite share of the total accomplishment. No attempt is made to prorate the smaller projects, such as buildings, bridges or minor improvements. Also no attempt is made to measure the dead time due to miscellaneous camp duties, Sundays, protection work not directly chargeable to suppression, etc.

During the remaining eight months of the year the organization is reduced to the yearlong force except for an occasional odd job, and employed on current work, timber surveys, special improvements, and last but not least, plans, surveys and estimates for the ensuing field season.

The foregoing information may give some conception of the work involved in the protection and improvement problem as encountered on the North Idaho Forests. The form of organization under discussion is one which is expected to handle the fire situation without the employment of special fire fighting crews. Since this was the initial year for an organization of this kind, it is not yet possible to determine just what relation the indicated average accomplishment bears to the normal accomplishment which it might be possible to expect.

How a Lithographer Puts a National Forest on Paper

By T. S. Brock

The lithographic work of the Forest Service is done by the Geological Survey, which has one of the largest and best equipped lithographic plants in the East.

When the tracings of a Forest Atlas Folio are received in this office, the necessary instructions are prepared and the work forwarded to the Survey for printing. The tracings are first sent to the photographic section where a glass negative is made of each sheet. As the Forest Atlas is printed in three colors, it is necessary to make three negatives for each Atlas page. From these negatives prints are made on specially prepared zinc plates. These zinc plates have all the properties of a lithographic stone,as explained in the article on "Lithography" in last week's Bulletin. From these plates impressions or prints are made on a very thin paper known to the trade as transfer paper. The work is now ready to be sent to the transfer room where impressions are taken from all the zinc plates and transferred to aluminum plates 44 x 64 inches in dimensions. These plates are so thin that they may be rolled up like a sheet of cardboard.

As the standard Atlas pages are 18 x 21 inches, six pages are placed on each of the big plates. If the Atlas contains 12 pages all the sheets which show the culture or the works of man, which are printed in black, will take two of the big plates. Two more will be needed for the drainage or water features printed in blue, and two for the contours printed in brown. When the transferers have finished their part of the work the aluminum plates are sent to the lithographic artists' department where any blemishes or weak places in the transfer are corrected and the plates are finally prepared for the multicolor press.

This press is a huge machine and occupies a floor space of 20 x 30 feet. It is more than 18 feet high and requires four men to operate it. It is capable of printing a sheet in four colors at one time, but as our Forest Atlas only requires three colors, one of the large cylinders is disconnected

How a Lithographer Puts a National Forest on Paper (Cont.)

for this particular kind of work. The cylinders are mounted one above the other and each one has its own set of ink-rollers. The cylinders are first swung out of position so that the aluminum plates may be bent around them and clamped in their proper positions. They are then adjusted, the inkwells filled with the appropriate colored ink and after a few sheets of paper have been fed through the machine so that a perfect register may be determined, the work proceeds at the rate of 1,800 sheets per hour. Each sheet of paper travels more than 45 feet in passing through the press. The printed sheets are then taken to the trimming and assembling foom, where the pages are cut apart and the Atlas Folio is assembled.

WASHINGTON NOTES

Forest Service Reception: More than two hundred members of the Forest Service and their friends enjoyed a delightful reception and dance at the Washington Club on the evening of January 20. Assistant Secretary of Agriculture and Mrs. Ball, Assistant to the Secretary and Mrs. Harrison, and Colonel and Mrs. Graves were the guests of honor.

A Gold Bug: The Forester recently received a request for a permit do dig for buried treasures in one of the National Forests. The Branch of Lands, in keeping with its customary broad and liberal policy, granted the request without asking for royalty or special privileges.

Receipts Show Increase: National Forest receipts for the period July 1 to December 31, 1920, were $1,245,448--an increase of $118,682 over a like period in 1919. Timber sales contributed $102,836 of this total. District 6 leads with an increase of $61,264, closely followed by District 1, with $51,500. Districts 2, 3, and 7 show small decreases.

New Road Agreement: The Forest Service has negotiated a cooperative agreement with the Department of Public Works of Idaho, whereby the Government agrees to contribute $24,000 toward the construction of a 6.22 mile section in the North and South State Highway which crosses the Weiser National Forest near the headwaters of the Weiser River. This part of the road is known as the Glendale-Tamarack section and passes through approximately 180,000,000 feet of yellow pine and Douglas fir timber on National Forest land. The road will aid in the administration and fire protection of the Forest and is a link in the State trunk highway which is the only direct route between the northern and southern portions of Idaho which can be maintained for yearlong traffic.

Family Meeting: The monthly meeting of members of the Forest Service was held January 25 in the auditorium of the National Museum. Dr. Sampson and Inspector Chapline of the Branch of Grazing gave interesting talks on range investigation work at the Great Basin Experiment Station, Utah, and grazing reconnaissance on the National Forests.

Motion Pictures: "The Ranger and the Law," a new motion picture in 5 reels depicting the "tempestuous tale of life in the Forest Reserves" has just been released. A half-dozen stirring fist-fights by a "tenderfoot" Easterner who becomes a Ranger; and the usual "girl in the case" lends color to the plot. (Won't someone please write a movie scenario where Forest officers do something besides pack around six-guns, wear star-badges, and fall in love with the "lone nester's" only daughter.--Ed.)

Southern Yellow Pine Yield Tables: The first organized, systematic effort to secure yield tables for the entire southern pine belt has just been started. The Forest Service, the National Research Council, the Southern Pine Association, and several State Foresters of the South, are cooperating in the field work of gathering data for the construction of what may be termed normal yield tables for the several pines of the South. This work was made possible through a contribution of $10,000 by the Southern Pine Association. The data will be gathered throughout the entire region by uniform methods and all worked up in the same way. The study involves the measuring of 680 plots and the work is to continue three field seasons. The leader of this project in the field is

Southern Pine Yield Tables (Cont.)

Austin Cary and the Forest Service representative in charge of the field measurements within the territory to be covered by the Forest Service is Mr. E.R. Hodson. Hodson left for the South on January 15 and will be away for the next three months.

The End of the Trail: 4,761 Government employees were retired during 1920, according to J. W. Starr, President Emeritus of the United States Civil Service Retirement Association. Of this number 111 are drawing $360, or less, annuity a year.

FOREST PRODUCTS LABORATORY NOTES

Spark Arrester Study: For the benefit of the National Forest Districts, the Laboratory has undertaken a study of the efficiency of locomotive spark arresters. The work is being financed by the Western Districts and will largely be handled in cooperation with them. It has been found that there is a mass of information on this subject available from widely separated sources and to complete this phase of the problem alone will consume considerable time.

The result of this study will be of far-reaching value in National Forest fire protection plans and this is especially true at this time when due to the impending scarcity of fuel oil railroads are reverting to coal for fuel. Mr. J. S. Mathewson, a mechanical engineer of wide experience, connected with the Laboratory, has been assigned to this study.

DISTRICT 1 - NORTHERN DISTRICT

State Sportman's Association, organized in Montana largely through the influence of the Forest Service, has been decidedly active and is apparently getting excellent results. A new Bill, establishing a non-political State Game Commission, which will be entrusted with the handling of all fish and game matters, has already been introduced in both houses of the State Legislature, and has a great deal of support behind it.

Arson Squad: The development of Law Enforcement work in District One is well under way. Mr. O'Brien has returned from a trip to Districts 5 and 6, where he studied methods in use by both Districts. A conference of a week or ten days of about fifteen men from the heavier fire forces of the District has been arranged to begin on February 3.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Ranger Week on the Uncompahgre: The rangers and the office force, including the stenographer, discussed allotments, fire plans, grazing applications, personnel ratings, met with six advisory boards, discussing grazing problems of the year, met for a social evening at the Supervisor's home, and best of all, conducted a ranger meeting along our own ideas. The program of the ranger meeting consisted of questions propounded by the Forest officers as most nearly expressing the things they wished discussed. We hope to duplicate it another year.

Meetings of American Foresters: The Denver Section of the Society of American Foresters is having an interesting series of meetings this winter. The first meeting on December 6 was addressed by Mr. Arthur F. Fischer, Chief Forester of the Philippine Islands, who is on furlough in the United States at the present time, on the "Forest Situation in the Philippines." On January 10, papers prepared by Supervisor Jeffers of the Uncompahgre Forest and Supervisor Hoffman of the Montezuma Forest on the subject "Should the Pinon Juniper Type be included in the National Forests" were read.

Sunday Gulch Road: The cooperative agreement of the Sunday Gulch section of the Hot Springs road has been signed by the Governor of South Dakota. Construction of this section will afford through travel from Custer to Hill City via Sylvan Lake.

Study Courses: We are now giving six courses with 178 men enrolled. This number does not mean that many different men, since there are a few who are enroll in two courses and all such are counted twice. On the other hand, it does not include those taking the Manual examinations, those enrolled in the Telephony course given by the Telephone Engineer nor the 18 members of the District Office study club. If there is any virtue in study, D-2 should soon begin to see the effect.

Game Preserves: The Colorado Game & Fish Protective Association, organized last June, has been doing good work in getting introduced before the State Legislature bills covering important game legislation. A complete revision of the game laws was made conforming them to the Federal Migratory Bird Law, There were also presented 7 different game refuge bills, one providing for a small addition to the existing State Game Preserve in northern Colorado; an antelope preserve on the plains north of Fort Collins; a game preserve covering the area directly west of Denver; another covering the Pikes Peak region; one in the Spanish Peaks of the San Isabel National Forest; one in the northwestern part of the White River Forest, and the Conejos River watershed on the Rio Grande. We are hoping that all these bills will be enacted into law. They have the backing not only of the Game & Fish Protective Association, but the State Game Department, the Forest Service and other organizations throughout the State interested in the matter.

In this connection, the District Forester recently had an opportunity to take up with the Governor of Nebraska the recommendation made for several years past that the two divisions of the Nebraska National Forest be made Stat Game Preserves. There is some doubt, under the present Nebraska Game Law, whether the State has authority to create preserves out of public land without paying rental for them. This will be overcome by the revision of the State Game Law.

Botany Course: A correspondence course in botanical studies is being offered this winter to the members of District 2. The course is built with the object in view of extending a general botanical knowledge of range plants which are to be studied in natural and artificial groups rather than as individuals. Special emphasis is placed upon the studies of the 5 tribes of grasses which are the most important in the District. The other plants studied fall within 30 plant families. Between 400 and 500 plant specimens have been especially mounted for use in the course. There are students enrolled in the course from 11 Forests and the District Office.

National Forest Recreation Indorsed: At the recent meeting in Des Moines, Iowa, on National Parks, January 10, 11, and 12, one of the members of the American Society of Landscape Architects offered a resolution endorsing the use of forest lands as recreation grounds which was supported by talks from several members of the profession who were present. Although there was some opposition to this on the part of certain factions in the conference, the support of the measure by the landscape men and the State forest men present caused its adoption as a policy of the meeting. It is almost certain if the attention of the landscape architects of the country had not been called to the importance of recreation in the forests of the country through the recent action of the Society in changing the Committee so that it would include Forests, that this support would not have been forthcoming and the resolution which is basically sound would not have passed. This shows the interest this Society is taking in the work and augurs well for further constructive cooperation from this national organization of men interested in human use of the outdoors.

District Investigative Committee: A meeting of the District Investigative Committee was held on January 10 and 11 and was attended by Mr. Bates from the Fremont Experiment Station; Messrs. Thompson and Johnson of Forest Management, and Supervisor Philips, and Forest Examiners Keithley and Roeser of the Pike. The Committee recommended that thinning experiments be initiated in mature lodgepole pine on the Medicine Bow and Arapaho Forests, in mature yellow pine on the Black Hills, in Engelmann spruce on the Arapaho and White River, and in Jack pine pulp chances on the Michigan. Working plans will be prepared for thinnings in Jack pine for Christmas trees on the Nebraska and for the same purpose in Douglas fir on the Pike. Several new reforestation experiments were also recommended

DISTRICT 3 - SOUTHWESTERN DISTRICT

Mistletoe A Minor Forest Product?: A request has been received from the Forest Products Laboratory for a small shipment of mistletoe berries for experimental purposes. The Laboratory wishes to test the properties of the sticky substance surrounding the berries from the viewpoint of its possible use as an adhesive for special purposes.

District Committee Meeting Note: Mr. Pearson told the meeting that he was reaching some definite and interesting preliminary conclusions regarding brush disposal in the W. Y. Pine type. He thinks, first of all, that the pulling of brush is not advantageous as a form of brush disposal to assist reproduction. The slight shade value in early growth of the seedling is more than offset by adverse competition with grass which grows very rank in the brush due to protection against grazing. Of course the protection afforded against grazing damage by pulled brush is another matter and should not be a factor with proper grazing regulation after cutting.

Mr. Pearson considers brush disposal in this type in order of its desirability as follows:

(1) Pile and burn.
(2) Scatter brush openly so that cattle can keep grass down.

On the new operations on the Sitgreaves by the Apache Lumber Company, a method of brush piling and burning will be followed together with a progressive system of grazing control.

Growing Christmas Trees in Tucson: "The Arizona Cypress is becoming a prominent Christmas tree species in this locality. Inquiry regarding what appeared to be illegally-cut cypresses in the Tucson market developed the fact that they were grown (under irrigation) at the Monthan Ranch. The University also donates annually some of the cypress trees growing on the campus. They are said to be 9 years old and some of them are 25 or 30 feet tall. The stand is dense enough to benefit by thinning."--Coronado Bulletin.

Soil Type and Root Form: In connection with the study "Relations between Soil Type and Root Form of Western Yellow Pine Seedlings" being carried on by Mr. Haasis of the Fort Valley Experiment Station, it was found that in some instances in a clayey soil one year old seedlings extending but slightly more than 2" above the surface of the soil had a root development reaching 17 inches beneath the ground level. At the recent meeting in El Paso of the Southwestern Section of the American Association for the Advancement of Science, Mr. Haasis read a paper on the subject of this study.

Wood and the Ancients: "Oak has the peculiar property of lasting for centuries when buried in water or wet sand. Oak piles from bridges constructed by the Romans have been found to be as sound as when placed, nearly 2,000 years ago."

If only our ancients of the Southwest had left us a literature and writings as complete as the Romans, giving us a line on the dates of their various exploits we might have some records on juniper and cedar logs in prehistoric pueblos that would well rival the oak records above.

A Suggestion for the Dry Forests: "Since as a matter of cooperation we act as Deputy Game Wardens, Special Agents for the General Land Office in reporting on Homestead Claims within the Forest, Public Health Officers, Assistant Federal Food Administrators and various and sundry other duties, why not an appointment as Deputy Revenue Agent? --Tonto Bulletin.

New Signs for Old: Ranger Blodgett, in charge of the Sign Shop, has demonstrated the practicability of reviving faded signs by a coat of spar varnish. A supply of this varnish, in small portable containers, will probably be furnished each Ranger, through centralized purchase, sometime during the coming season. This will open up a big new job of varnishing faded signs, in place, and will add a varnish can and brush to the traditional hardware store already supposed to be draped about old Dobbin's staggering frame. It will be a pious hunch to get those 1920 (and mayhap 1919) signs out of the haymow onto the ground before the 1921 crop arrives and before the varnishing job is scheduled to begin

DISTRICT 3 - SOUTHWESTERN DISTRICT (Cont.)

Wanted--A Mathematics Shark: An average of 95 tons of soil, pebbles and loose rock is carried by the rivers into the ocean every year from every square mile of the United States, according to the U. S. Geological Survey. According to this, the Forests of the Southwest must contribute about 2,950,000 tons of solid matter to the ocean each year. If anyone has a fairly close figure on the total weight of the forests in D-3, and a volunteer with enough paper and pencils and ample time will come forward, we shall shortly be able to announce when we can reasonably expect to go out of business.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Boy Scouts: Twenty members of the Portland Boy Scouts made a three-day hike to Wahtum Lake on the Oregon Forest during the holiday vacation. They found so much snow along the trail that it was necessary to camp for the night at one of the Forest Service shelters before reaching the cabin, which they found the next morning nearly buried in snow.

Supervisors' Meeting: This will be held in Portland, February 14 to 21. While the meeting is to be informal, at the same time discussion of live topics of policy rather than routine is planned. Attendance from the field is to be limited to Supervisors.

Yale Foresters Reunion: The Yale Forest School celebrated its 20th anniversary on December 21 and 22. The main celebration was in New Haven, but alumni in different western cities held meetings on December 21. Yale foresters to the number of 18 met for an informal dinner at the University Club in Portland. The following Forest Service men attended: Ames, C. J. Buck, Waha, Guthrie, Fromme, Brundage, Munger, Osborne, Evans, Heintzleman, Bright, and Neal; civil life was represented by C. S. Chapman, forester of the W. F. & C. Association, A. W. Cooper, Secy., W. Pine Assoc., H. D. Langille, Logging Engineer, Bridal Veil Lbr. Co., Prof. D. T. Mason, U. of Calif., Prof. Newins, O. A. C., and C. A. Lee.

Reconnaissance Check: The Oregon National Forest has made a comparison of the actual scale and the 1915 intensive timber reconnaissance cruise of the area cut over to date on the West Fork Mill & Timber Co. timber sale. The cruise for the area in question was 40,978,000 and there has been cut 38,616,000. In addition to the cut, some merchantable timber has been left standing in seed trees. This means that the cruise is above the actual scale something less than 6 per cent, which is gratifyingly close. The cruise and the actual cut of the Douglas fir alone are exceedingly close; the discrepancy occurs chiefly in the hemlock about the merchantability of which the cruisers were apparently over-optimistic. The average cut per acre is 77,000 feet.--T.T.M.

Wallowa Timber Survey Project: The Powwatka and Washboard Ridge, Wallowa National Forest, were cruised between August 10 and September 20 by the timber survey crew in charge of Forest Examiner Conover. A crew of five experienced men and chief of party proved to be much more satisfactory than a larger crew of inexperienced helpers. A still smaller crew of the best men obtainable seems to be indicated under east side conditions in D-6 on account of mobility of outfit.

An average stand of only about 6,000 feet per acre was found upon the 12,500 acres cruised. Of this amount 55 per cent was yellow pine and 45 per cent inferior species. The timber is rather short, limby and scattered, due to the shallow, rocky soil and dry climate.

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"When the whole blamed works seems
gone to pot
And business is on the bum
A little grin
And a lifted chin
Helps some--my boy--helps some!"

Nature's Fire E d that a fire in a dense stand of Douglas fir young growth, will travel only before a strong wind or in areas where the ground is covered with a heavy layer of dry material. Did you ever think why it will not run through a young stand? If you were to throw 3,914 gallons of water on an acre of fire it would seem that it surely must stop, and it would under ordinary conditions. A strong wind might keep it going or a lot of dry material to keep it hot. This is exactly what happens when a 12-year-old stand of Douglas fir with 8,000 trees per acre burns. The needles must dry before they will burn and the fire must be hot enough to dry them out ahead of it. In order to dry the needles to the burning point 3,914 gallons of water per acre must be evaporated from the needles. This is why a fire must be kept hot or the moisture will cool it to a point where the needles will not burn. In surrounding a fire remember that it is more apt to be stopped in young growth than in the open.--J.V.Hofmann.

Game and Forest Officers: The way of the game law transgressor is hard, and if the transgressor happens to be a forest officer it ought to be very hard. Comes now news to the effect that one J. F. Chambreau, one-time employee on the Ochoco, "killed a deer unlawfully in Crook County, while in the employ of the U. S. Forestry Bureau." He was fined $50 and court costs of $5.00, which he paid, and the record sayeth that he confesses that he is sorry, that he has learned a severe lesson, and that he will not hereafter violate any laws in the future. Selah--So be it.

Douglas Fir Turpentine: In Vancouver, Washington, is a plant that is making turpentine, pine oils and rosin from Douglas fir "pitch." The company is at present offering 50¢ a gallon for the oleoresin at point of shipment, and will furnish the tools for its collection. The working of the crop is about as follows: a half-inch hole is bored into the tree, into which a short tin tube is inserted. On this tube is hung a 16 to 20-ounce glass bottle. The "pitch" is emptied from the bottle to a metal drum. It is claimed a 14-inch tree will yield 2 gallons of pitch a year. If that is true, many acres have 200 trees on them, and at 2 gallons each gives 400 gallons, which is worth 50¢ or $200 per acre.

Shingles: Mr. Gibbons represented the Service at the fourth annual Western Red Cedar Congress held at Seattle on December 7, two hundred representative shingle manufacturers from all sections of the Northwest attending. Ways and means to rehabilitate this industry were discussed, most consideration being given to the matter of market extension. Possibilities of shipping shingles via the Panama Canal were discussed.--W. H. G.

Applied Public Relations: Supervisor Ramsdell of the Umpqua Forest realizes the possibilities of Public Relations work, that it is good policy to cooperate in community and county development work. He recently contributed two articles on hunting, fishing and recreation and timber resources of Douglas County to an illustrated publicity folder gotten out by the Roseburg Chamber of Commerce, covering the resources and possibilities of Douglas County, Oregon.

Lake Chelan Folder Popular: "The Land of Beautiful Water," a Lake Chelan folder issued by this District has proven a very popular recreation booklet. Unprecedented demands have been received for this publication, which has been sent out to practically every State in the Union, as well as Canada.

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Ranger Bill Says:

"There's lots worse things in this world than losin' the Bonus--but I can't think of 'em just now."

"Winter reconnaissance on this Forest is goin' to start as soon as rabbit huntin' gets good."

"My wife says you may be able to extract sugar from trees, but what she's interested in is gettin' a livin' out of a Ranger's salary."

From Pump to Station: In the days of the old square-rigged sailing-vessels, it was necessary to carry a large crew for emergency purposes. In between times, there was not much to do, so they would set the crew to "holy-stoning deck and pounding cable." No such artificial needs exist on the Rainier.

Since the close of the active field season, several of the rangers on the Rainier Forest have been making lumber on the Nile. Deputy Supervisor Fenby and Ranger Hagon were working together in Ranger Croxford's district. Buildings were needed at the Currant Flat Ranger Station site. Here were the trees and there was a semi-idle sawmill. We concluded it would be good business to make saw-logs, take them to the mill and run them through. Ranger Arneson came to our assistance. It was in yellow pine. The falling and bucking went fine; piling the tops was not so interesting; loading was still worse. We had poor equipment for the job, but we got them to the mill, a mile away. Croxford was keen for running them through the mill ourselves. We had seen what kind of a layout it was, but this enthusiasm got the best of us, and negotiations were concluded with the owner. The sawyer had just quit, so we sent for Ranger Brunn to pull the levers. Now we have 35 M.B.F. of good healthy lumber, fat 2x4's and thick 1x12's, all sticked and stacked at a cost of about $12 per M.

Value of Ranger's Time: The item "What is your time worth," by Mr. Morrell, in the Weekly Bulletin of August 9, 1920, is very interesting.

I have carefully checked over my diary for fiscal year 1920 and find that I have spent 213 days of 9 hours each in the field and 115 nights away from headquarters, and only 56 days of 8 hours each in which no official work was performed. I have taken care of 56 miles of telephone lines, 27½ miles of trails, and kept up 1,240 rods of fence, developed 6 springs, "herded" 5,575 head of cattle and horses, and kept four Stock Associations in fairly good humor. Nineteen days of 10 hours each were expended in burning brush on a sale area not under my administration, and 39 days were spent on hauling forage, mail, and supplies, which leaves 174 days of honest field work which cost Uncle Sam $9.66 per day--and the Supervisor got all of his field reports worked up in the office by his Ranger for nothing.--L.A.Carpenter, Wallowa.

SERVICE BULLETIN

U. S. Forest Service

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(Not for Publication)

WHY DOES A RANGER RESIGN?

By A.A.McCain--Teton

Mr. Barnes' discussion of Ranger eligibles and resignations, in the Service Committee Meeting of December 9, should put everybody to thinking who is concerned about the Ranger force.

I want to tell you what I believe is the reason why many Rangers leave the Service. It is not entirely a question of salary. Not all that have quit the Service are making more, year in and year out, than they were making in the Service and they know it.

I dare say that the great majority of those who have quit actually liked the Service work, perhaps better than anything they have been able to land since. Then why do they quit? There are several reasons besides the question of salary. I will cite one reason based upon a case which very recently came under my personal observation.

This is the case of a man with eleven years service to his credit as a Ranger. He was a good Ranger, a good housekeeper in camp or cabin and cared little where his duties took him and how long they kept him away. However, one fine day he strayed away on a few days' leave and came back a benedict.

All was fine and dandy for a few years. Mr. Ranger saved his money and prospered and contentment was the keynote of happiness at this Ranger Station.

The station was eight miles from a small town and post office and had good telephone service. The site was set in a niche in the mountains of almost indescribable scenic beauty. Wild game was abundant, and fishing in the nearby streams was good. And, sometimes during the summer when the road was dry and it was not so hot that a jitney could make the hills without melting the crank shaft bearings, a woman friend or two would call on Mrs. Ranger. Rather pleasant and romantic setting for a home.

But Mr. Ranger had a large district to look after which kept him away from home a good deal of the time, both summer and winter. At first Mrs. Ranger went with him on all his trips. However, household and family cares soon commenced to demand more of Mrs. Ranger's time and it became difficult for her to accompany Mr. Ranger even on the briefest of field outings.

During Mr. Ranger's frequent absences from home there were no neighbors to drop in for a friendly visit nor could Mrs. Ranger run in to a neighbor's occasionally. Possibly she would call a distant friend on the phone and the conversation would be something like this: "Oh, that you Mrs. Ranger? For goodness' sake, I thought you was dead--I was just telling John yesterday that I didn't see how you stood it up there all alone so much and no way to get out, even though you was sick--and the baby--you bet you wouldn't catch me taking the chances you do for the best man alive or for the Government either***."

From this time on Mr. and Mrs. Ranger have some very serious talks about a transfer or resigning. Mr. Ranger liked the work, was doing fairly well financially and hated to quit. A canvass is made of the available Ranger Stations to which a transfer might be considered, but they are all practically the same and a transfer to another Forest would not be desirable. Mrs. Ranger finally wins out with arguments that summed up amount to this--the job and the environment, at the average Ranger Station on the average Forest, is a man's and has comparatively little interest for the average woman and the average family.

A Ranger with his headquarters and home five to twenty miles from the business and social center of the community he serves, on a road that is infrequently traveled and for long periods practically impassable, is certainly working under a handicap, and his family must bear a heavy burden, imposed by isolation, of a lack of all the social benefits, enjoyments and diversions that in these days is within the reach of practically every family.

Four out of seven yearlong stations on the Teton are not even afforded school facilities. How long do you suppose I could hold men with families at these stations?

Why Does A Ranger Resign? (Cont.)

Three out of four of these stations could be so located with reference to the center of community activities that the business of the districts would be more easily and more efficiently handled and the Ranger's family would be much more contented.

I do not want to leave the impression that Rangers should not receive a larger salary. They should. But there are some things that all of them want and will have that can not be supplied by an increase in pay alone.

What People Think of Us

(The following is clipped from the Idaho Post of Moscow, Idaho, as an expression of a point of view which is doubtless fairly representative of that held by constituents of many Congressmen.--R.H.)

We are in receipt of a circular letter, accompanying about two columns of propaganda from the "National Federal Employes" in which the secretary offers to furnish a weekly "news" letter "without charge," and asks the publication of the two columns of propaganda for increased wages for federal employes.

We declined the offer. We are in favor of reducing the pay of federal employes until federal positions cease to be so attractive that a good portion of the population is scheming to get "on the pay-roll." A recent census shows that there are now in the national capital 69,000 federal employes.

The propaganda accompanying the circular letter is in favor of the Lehlbach reclassification bill, which would increase the pay of all federal employes. We are in favor of all those who are not satisfied with the federal salaries now paid, tendering their resignations and getting other employment.

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If we find there is anything like a unanimous demand among the taxpayers for salary increases we will support the bill. But until the people who pay the taxes which pay the salaries ask for the increase we will decline to interfere with the government's prerogative to fix salaries for its employees, or the privilege of the employes to quit the job when they can get a better salary for the same amount and kind of work elsewhere.

THE POOR FISH

By T. D. Woodbury--D-5

(Note: This was originally the introduction to a longer article prepared by Mr. Woodbury. The article complete can hardly be published now, since it is no longer "news." But the Editor feels that so serious a discussion as Mr. Woodbury's on so live and vital a topic as "The Duties of an Assistant District Forester" deserves to see the light of day.)

The general "District Forester," "Supervisor" and "Ranger" are fairly well known to our gentle "forest users" and other equally intelligent citizens. Quite likely a diligent search among the above might bring to light some daring spirit who would be willing to attempt a description of the duties of the above mentioned "public officials" as well as their excuse for living. But who--aside from a few of the super-intellectuals among the regular subscribers to the "Service Bulletin"--has any conception of the who or why of an "Assistant District Forester?" While I admit that a definition of these "birds" is entirely unnecessary since they "don't mean nothing" (as Goldberg would say), yet will I attempt it.

Being one of them myself, gentle reader, you will understand that my interest in this trivial subject is personal as well as scientific. I have grappled with this weighty problem through many days of slumber and nights of wakefulness. In my desperation, I even browsed hungrily in the "voluminous" Forest Service library. All to no avail until one happy day I discovered a two-bit edition of an "Encyclopaedia of Slang" by Will Rogers, in a second-hand bookstore on Market Street. In this the illustrations depicting "A Poor Fish" and "An Official Goat" caught my eye.

The descriptions of these little known species which accompanied the illustrations indicated to me clearly that my quest was at an end; that nameless thing an "Assistant District Forester" could now be properly labelled and described as a hybrid--a cross between a "Poor Fish" and an "Official Goat."

He resembles a "Poor Fish" because he insists on blindly and foolishly holding to the mistaken idea that his job really amounts to something and will not admit that a Supervisorship should be the ultimate end and aim of all Foresters or that Supervisors are "Superior Beings." His likeness to an "Official Goat" need not be described. It will strike you "like the face of your mother-in-law in a crowd." If the District Forester decides to request a resignation or to put over some other "mean" job, the buzzer rings for little A.D.F. If a Supervisor makes a bone-head play, little A.D.F. is trotted out on the carpet and "called down" for not having foreseen and prevented aforesaid b-h-p. Selah!

Forestry That Counts

By W. G. Durbin and Roscoe Weaver--Modoc.

(Most of us have been bored at one time or another by the poor "nut" who says the Rangers ought to burn down dead trees and snags in winter. We have explained how many snags there are and how much it would cost, etc.,etc., and we have felt so pleased with ourselves at being so patient.

And then along comes Bill Durbin et al and makes our explanation of why it can't be done look like an old time argument showing why man couldn't possibly fly.

I recommend Durbin's exploit for thoughtful consideration by those one hundred per cent foresters who say that fire protection is simply a division of forest "organization" and can not be made effective until the Forests are brought under "management,"--some 50 years hence.--Roy Headley)

As every one knows, who has had any experience in fighting forest fires, dead standing and down trees present probably the chief difficulty in holding a forest fire after a line has been constructed around it. This question naturally comes up: Is there any feasible way to remove this fire menace from the National Forests? In regions where large timber sales are in active operation, the provision in the sales contract requiring the felling of all dead trees and snags twenty feet or over in height on the sale area accomplishes this, but there are vast areas where no cutting is being done and in which it will be a long time before any cutting will be undertaken.

It is certain that the dead trees in the National Forests can not be cut down by the Forest Service except at a prohibitive cost. One solution to this question that appears feasible is burning down the standing trees and burning up the down trees.

With the idea of determining the cost of such an operation, there being no question but that the trees would burn if done at the right time, an experiment was tried on the Modoc this Fall, after there was no danger of a fire running.

Method Used

The method followed was to burn in strips, using a brush-burning torch and pitch wood for kindling purposes. An axe was carried with which a small hole was chopped in the tree near the ground and a fire started in it. A few pieces of bark and wood were all the fuel usually necessary to start the tree burning. In the case of down trees the fire was started in the roots (if the tree had been uprooted), or if broken off, both the stump and the tree were fired.

Fully 80 per cent or more of the standing trees burned to such an extent that they fell a few hours after lighting. A very large per cent of them burned up entirely after they had fallen, as did a great many of the down trees. Those trees which had recently died did not burn very well and in but few cases were there any attempts made to fire them.

It was found by using an auger and boring two holes into the tree nearly to the heart, one perpendicular to the tree, and the other at an angle intersecting the perpendicular hole from above, and then dropping a few pieces of lighted pitch wood into the hole, that one could be assured of practically burning down 100 per cent of the trees lighted. By using the auger both dry and soggy trees could be felled by burning.

Practically all of the trees, which did not fall, were so burned and charred that it will be a long time before they will catch fire and be the means of spreading a forest fire. This fact was proven many times by those engaged in the work in their attempts to burn snags and trees that had been burned in some former fire.

Results

The experiment proved that standing trees could be burned down or so burned that their existence will not be as great a menace from the fire standpoint. Many of those left standing will eventually be blown down by the wind, so that it will be safe to say that 90 per cent of those lighted will be burned down.

A large number of down trees were burned, and either consumed entirely, or the most inflammable portions burned away.

The following data will give a concrete idea of the work accomplished:

Acres covered	2,000
Number of trees burned	4,600
Av. No. trees burned per man per day	115
Av. No. per acre burned	2.3
Total estimated volume burned	5,530 M.ft.B.M.
Average tree burned	1,200 ft. B.M.
Average volume per acre burned	2,760 ft. B.M.

Costs

Labor (Man Days)

1 man 10 days	@ $6.72	$67.20
1 " 11.5 "	5.83	67.08
1 " 19.5 "	4.333	84.50
		$218.78
Subsistence, 41 days @ $.75		30.75
Automobile travel 416 mi. @ 7¢		29.12
5 gal. Kerosene		2.00
Matches		.30
Total Cost		$280.95

Cost per tree	.061
" " acre	.1404
Average cost per day	7.82

The automobile mileage charged is excessive, due to the fact that the work was interrupted by the crew having to come to Alturas in the midst of the work, so that the cost is nearly twice what it should have been if the operation had continued without stopping.

The Pack Rat

By A. G. Jackson

The pack rat is a social cuss who calls around at night,
To cheer the forest ranger bold and thrill him with delight.

No cabin is so lonely or hid in mystic woods,
But there the pack rats rendezvous and mix the ranger's goods.

The pack rat's fond of raisins sweet, and prunes he thinks are nice;
But beans he scatters on the floor, with coffee, spuds, and rice.

The flour and sugar he mixes up with spoons and forks and knives;
He chews the strings of cruising shoes; on kindling wood he thrives.

The pack rat's fond of music sweet. He's never known to fail,
Whene'er he has a chance, to drum a stovepipe with his tail.

He happens in when all is still and quiet in the night;
To crash the tinware to the floor is his supreme delight.

And when the ranger starts from sleep, and sets a trap with care,
The way the pack rats don't get in fills him with dark despair.

The pack rat runs around the trap; the deadfalls make him smile;
When someone passes him a shoe, he dodges it a mile.

But when the ranger's wrath is roused, to prove he's not a dub,
He slays the pesky pack rat by a flashlight with a club.

Long-Haul Shipments of Pulpwood

By C. W. Boyce--Washington, D.C.

Considerable comment has been aroused in pulp and paper circles by the announcement of the Great Western Pulp and Paper Co. of Wisconsin, that after having tried out two carloads of Douglas fir from Vancouver, B. C., in their mills that they are preparing to receive regular shipments hereafter. The question of what constitutes a prohibitive shipping distance of raw material for manufacture into paper is brought up in a new light. Hauls from northern Ontario to mills in Pennsylvania and New Jersey are common, but a haul two-thirds of the distance across the continent has struck the industry as an unheard of venture.

When actually compared with the distances which wood is being hauled in a good many cases in the East, the trans-continental haul does not appear so great; amounting to approximately 50 per cent increase. When viewed from the point of freight rates, the difference is really not large. The rate per cord would be approximately $12.00. Many eastern mills are paying very nearly that at the present time. The difference in average freight rates would be more than made up in the lower cost of the wood at the point of cutting.

With the decreasing supply of pulpwood, the eastern mills have been forced to go farther for their wood. The question has frequently been raised as to what distance a mill could afford to haul its raw material rather than move. The general trend of the industry has been toward the long hauls rather than moving.

The making of chips at the source of wood supply and shipping them in bales to the mill has been suggested and tried out successfully. Some mills, particularly the smaller ones, in the more thickly settled regions are doing this at present. The experiment of grinding wood for mechanical pulp at the woods or in the near vicinity and shipping the resultant ground wood to the mill has not been tried as yet. The grinding requires so much power that it is doubtful whether a portable rig could be constructed which would do the work profitably.

An Experiment Worth Trying

By E. S. Keithley--Pike

(It is a bit out of season for Christmas tree articles, but the details of the following experimental thinning on the Pike National Forest, Colorado, may be of assistance to Forest officers in solving the Yuletide tree problem which yearly confronts the Service. Our policy favors the use of Christmas trees, when rightly cut from the forest. Here, then, is the answer to those who would abolish this ancient custom which yearly brings joy to the hearts of little children.--Ed.)

A commercial Christmas tree sale, though experimental in nature, has actually been made on the Pike National Forest. This sale for 200 trees involved the cutting over of approximately one acre of Douglas fir sapling stand, mixed to a slight extent with yellow pine. The sale area is located 35 miles from Denver on the Sedalia-Decker Springs road and is accessible by truck. In cutting trees, improvement thinnings were kept foremost in mind. Approximately 600 trees were cut which yielded 200 trees suitable for Christmas tree purposes. The stumpage price charged was a flat rate of 15¢ each--thus showing a gross return of $30.00 for the acre.

All trees were cut by a Forest officer. The purchaser followed with an axe, dragging out all trees cut, sizing them up in doing so. Those trees, or portions of them, suitable in the opinion of the purchaser for Christmas trees, were cut by him to the desired length and thrown in piles, which were later hand skidded to the road. All others not fit for Christmas trees were cut in two and thrown in brush piles ready for burning. Small poles too large to burn were limbed up and thrown in separate piles.

The cost to the Service of getting out the 200 trees and making the thinning was $14.34. An allowance of $5.00 is made to cover the cost of brush burning next fall. Thus the approximately total cost to the Service will be $20.00. This leaves a net profit of $10.00 per acre. The actual time of Forest officer in making the thinning on the acre was slightly less than 8 hours.

An Experiment Worth Trying (Cont.)

The total cost to the purchaser to get the trees to market was as follows:

Stumpage, 200 trees at 15¢	$30.00
Upkeep, depreciation, etc., on Ford truck at $6.50 per day for 2 days	13.00
Purchaser's time, 2 days at $5.00 per day	10.00
City license to sell trees	50.00
Total	$103.00

Trees were retailed in connection with a grocery store and no cost is allowed for selling the trees. Also the cost of delivery can not be determined, due to the fact that usually the trees are delivered with groceries.

Market value, 200 trees at 75¢ each	$150.00
Total operating and marketing costs, brought forward	103.00
Profit	$47.00

Per cent profit, approximately, - - - 46 per cent.

The small number of trees handled and the heavy license charge made by the City, lowers materially the profit in this particular case, which would be considerably higher if more trees were handled--the license being the same whether 100 or 1,000 trees are sold. However, the business should be attractive and promises a fair profit even under such inefficient methods as exemplified in this case.

Proof of the pudding is in the eating and it is planned next year to advertise the sale of Christmas trees in commercial quantities on the Pike Forest. Forty-six licenses were issued by the City for the sale of Christmas trees this year. The number of trees sold per license ran from 200 to 2,000 trees. The average number is put at 1,000, which indicates a total of 46,000 trees sold in Denver. The supplying of this demand, if only partially, should net a nice little annual income to the coffers of the Pike Forest.

It is believed that by proper advertising, dealers in time will think National Forests when thinking Christmas trees, with the result that much will eventually be accomplished in satisfying the local demand for these trees and at the same time improve the stands on a definite area annually and check the destruction and promiscuous cutting of young trees throughout the mountain regions generally.--D-2 Bulletin.

Genus "Joonleventh" Nearing Extinction

By F. E. Bonner

Most of the wild and fearsome animals that have been inhabiting the National Forests in constantly increasing numbers during the past fourteen years will soon be tamed. Little credit has been accorded the small group of intrepid men risking their lives in this hazardous undertaking. Disguising their real purpose under the title of Entry Surveyor the rescue of the Forests from this awful menace has steadily progressed, so with the finish of the work now looming ahead in no uncertain fashion there can be no harm now in drawing aside the veil.

The origin of the trouble can be very easily traced back to that fateful date, June 11, 1906, when Congress decided to allow the Homesteaders to venture unrestrained into the vast unexplored and unsurveyed recesses of the National Forests. It wasn't long before our maps began to be decorated with what appeared to be weird and fanciful figures, but a closer examination revealed that these misshapen objects actually represented giant centipedes, Gila monsters, jumping Jack rabbits, whirling whympuses and what not. No two were alike in configuration and yet, oddly enough, they all appeared to be of approximately equal size. To the initiated each such figure on the map indicated a lair of the awesome creature pictured.

Genus "Joonleventh" Nearing Extinction (Cont.)

These beasts were of the genus "Joonleventh." As time went on the monsters became much more numerous and fantastic in form. Strange to say, investigation disclosed that an outlaw band of Forest officers called Landexaminers were conniving with the bold Homesteaders in the creation of these fearful animals. The reason for the custom will probably never be known. It is doubtful if the men who engaged in the nefarious practice could explain it themselves. The theory has been advanced that the lonely life in the wilderness unloosed in the minds of these men long sleeping images inherited from their prehistoric ancestors which sought expression in their labors.

The Landexaminers, unmindful of the dreadful future menace they were developing, vied with one another in attempting to create the most fantastic creatures. Men with this peculiar gift of a riotous, twisted imagination gave free rein to their fancy and let loose upon the Forests creatures of forms indescribable. Fortunately, there was some limit to the imagination of even the most gifted, and when novel forms could be conceived no longer, the custom grew of placing crooked stripes down the backs and down the legs of the giant creatures. This latter custom was initiated entirely by the Landexaminers and never found much favor with the Homesteaders.

The situation was rapidly getting beyond control and it was feared the "Joonleventh" monsters would eventually devour the Forests. A council was called and Easherman delegated to curb the breeding of more of the beasts. Organizing his cohorts from among the Landexaminers who had reformed, vast enclosures were drawn around the parts of the Forests which had not been infested. These were plainly marked "Nonagricultural," meaning poor feeding grounds, and as if by black magic further increase in the breed was effectively curbed.

How to subdue those already existing was a serious question, however. In the earlier years the Homesteader found that as soon as the monster was created the Landexaminer made haste to depart from the country, leaving the poor Homesteader to fight the beast alone. In desperation some of the Homesteaders employed experts to place strong survey lines around the beasts so as to render them harmless. However, due to the size and peculiar configuration of the animals a great amount of costly line was required and such a practice could be resorted to only for the most opulent.

Congress recognizing the affliction threatening the Nation, with these great beasts at large, as far back as 1912, granted money for the Forest Service to employ "Entrysurveyors" to control the monsters. These men, chosen for their daring with a transit and skill with Dmds, went to work with precision and patience. They overtook the monsters one by one and bound them with stout lines carefully tied to immovable posts of iron or stone. As a further precaution, the lines were tied to section corners and also connected to the celestial bodies in the heavens so as to forever reduce the monsters to a state of captivity. The safekeeping of the beasts was then given over to the Homesteaders and many are making attempts to domesticate them.

So far there have been nearly four thousand of the beasts captured successfully. More than 900 constitute the bag in the northern woods embracing District 1. The hunt has been less productive in the other Districts. For some reason they did not appear to thrive in the sunshine (and fog) of California, as but 204 have been found there.

The following record of the great secret hunt of the past eight years is for the first time opened to public gaze.

District	Number captured	Cost of hunt	Cost per head
1	906	$110,636.06	$122.11
2	746	106,483.46	142.74
3	831	107,590.01	129.47
4	818	84,117.33	102.83
5	204	24,120.47	118.24
6	426	74,048.94	173.82
Total	3931	$506,993.27	$128.97

Altogether, it is believed that not more than 500 of the creatures still remain at large. These will be persistently hunted and all subdued within two more years. The "Joonleventh" species will then become extinct, providing the substantial enclosures built by Easherman and plainly labeled "Nonagricultural" continue to so terrify the beasts as to prevent them from seeking new pastures.

Out of the Tall Timber

Major Swift Berry, formerly of the Forest Service and since 1919 Valuation Engineer in the Timber Section of the Bureau of Internal Revenue, has resigned to accept a position with Hall, Kellogg & Company of Chicago as their California representative with headquarters in San Francisco.

To Survey Idaho Timber: A bill is to be introduced in the Idaho State Legislature which proposes a survey of the forest resources of the State by the School of Forestry at the University of Idaho. The object of the survey will be to secure definite statistics in order to interest capital from other sections of the country by showing the possibilities of establishing wood consuming industries in Idaho.

Foresters Explore the Icy North: Two Maine Foresters were sent to Canada in November last to cruise a tract of 300 square miles for pulpwood. They returned to civilization after a tour of the northern bush which makes the recent trip of aviators seem like a joy ride. The difference is that these men were prepared for difficult travel and did not suffer from the intense cold nor hunger.

The Foresters were in the north woods three months; the outgoing trip consuming 16 days by canoe with 16 portages. When the cruise was completed, the rivers had frozen up and it was necessary to make the trip out by dog train, a 300-mile journey to Quebec. The Foresters were 100 miles farther north than the point reached by the aviators, but came out with no difficulty.

Louisiana Seed Tree Law: The Louisiana Seed Tree Law dealing with the leaving of seed trees on cut-over lands became recently effective with the announcement by the State forestry officials of what constitutes a seed tree, which is defined as a "sound tree of well-developed crown of not less than 8 inches in diameter at 2 feet above the ground." Under the terms of the law an average of one such tree must be left on each section or smaller subdivision which may be cut over by an individual or company. The object of the law is to prevent the complete denudation of forest land unless such land is agricultural in character and will be used for that purpose. This will afford at least some chance that cut-over lands will reforest naturally instead of remaining idle unless planted by artificial methods.

Keep Advertising: Publicity on National Forest resources is as necessary a part of Service activities as it is of any business organization. That is why it is needed all the time, not once in a while. Persistence is the keynote of success.

About four years ago there was a certain soap known around the world which had been continuously advertised for the last fifty years. Then the directors decided that because the factory was selling to capacity advertising could be discontinued as a useless expense. In less than one year from that time the business of the firm dropped thirty-five per cent in volume, and on a renewal of advertising it is said that it was necessary to spend five million dollars in extra publicity, over previous appropriations, to get back to normal.

The history of big business is filled with stories like this, but only a few have found it possible to win back trade foolishly thrown away. Herein lies a moral of which it is well for every Forest officer to take heed.

Wood Used in Freight Cars; More than two billion feet of lumber and timber are used annually in the United States for the maintenance of freight equipment and for the construction of new cars. This represents an annual outlay for material alone of over fifty million dollars, which is ample evidence of the importance of wood in this big industry.

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"There may be a lot of fellers out of work but I ain't heard of any Forest Rangers complainin' on that account."

"The shiniest badge ain't always on the smartest Ranger."

Where the Money Goes: In the search by Congress and the President for places to reduce expenses, Dr. Rosa's classification of appropriations for fiscal year 1920 is useful. Following his disregard of the foolish allocation of our bureaus among departments, the character of our expenditures is as follows:

a. Research and education	$57,000,000
b. Public works	168,000,000
c. Primary functions of government: Legislative executive and judicial	181,000,000
d. Pensions and care soldiers	366,000,000
e. Interest and public debt	1,016,000,000
f. Army and navy (current)	1,424,000,000
"Ordinary budget"	$3,212,000,000

These items do not include an "extraordinary budget" of cleaning up wreckage from the war such as the Shipping Board, railway deficit, bonus to employees, etc., amounting to about $3,275,000,000 of which there is reasonable hope for rapid diminution.--Washington Herald.

In Hiding: How a great government bureau can deftly hide itself away on F street is demonstrated daily by the United States forest service.

Visitors have the hardest sort of time finding this bureau, located on the south side of F street between 9th and 10th streets. Although it has a sign announcing itself, the sign is not gaudy and visitors often overlook it.

Some day the forest service will be located with the main Department of Agriculture group, when the plans already in existence are carried into effect. But for the present you have to hunt for it.

A visitor to Washington was standing on F street one day last week looking disconsolately around.

"Young man, can you tell me where the forest service building is?" he asked.

"You are standing right in front of it now," was the answer. And he was, but he didn't know it.--Washington Star.

Good Luck!

Another "exceptional" man has left the Service.

Notice has been received that Assistant District Forester R. F. Hammatt, of Branch of Public Relations, District 5, resigned on February 1 to become Secretary-Manager of the California Redwood Association.

Thus we lose one of the best publicity workers and "livest wires" that ever set out to teach people fire prevention, recreation, and the host of other things which go to make up our relationship with the public.

As an "Information" man I have long looked on Hammatt's work with pride and something akin to envy--and have profited by much of it. In these days it's results that count--and he got them.

Here's success! Our best wishes go with you.--The Editor.

New Legislation in Congress

Rejected Legislation: In the consideration of the Forest Service section of the Agricultural Appropriation bill by the House of Representatives, the following items were stricken from the measure:

1. Authority to purchase improvements for Ranger Stations, etc.

2. Authorizing the use of not exceeding $5,000 for the purchase of lands for Ranger Stations.

3. Provision for the erection of ten buildings at a cost not exceeding $2,000 each.

4. Granting of accumulated leave, for a period not exceeding four years, to Forest Service officers in Alaska and Porto Rico, etc.

5. The item to pay for a reconnaissance of the Northern Pacific Railway lands which are involved in a suit now before the U. S. Supreme Court.

A Close Shave: A separate vote on various amendments to the Agricultural Appropriation Bill was taken by the House on January 27. On the amendment for appropriation of $1,000,000 for purchase of National Forest lands under the terms of the Weeks Law, the first division was 89 ayes and 89 noes. On a roll call which was demanded the yeas and nays were ordered, the vote being yeas 154, nays 146, present 2, not voting 127. So the amendment was agreed to.

Indian Service Bill: A bill (H.R.15876) for the reorganization of the Indian Service, introduced in the House by Mr. Snyder (New York) on January 24, contains the following provision of interest to Forest Service officers:

1. Sec. 6. "That on and after July 1, 1922, there shall be in the Forest Service, in the Department of Agriculture, an Indian Forest Division, to which there is hereby transferred all the authority now exercised and all the duties now performed by the Bureau of Indian Affairs, in the Department of the Interior, with respect to the care and disposal of timber upon Indian reservations ***."

Snell Bill: Conflicting views as to the effect of enactment of the proposal of Representative Snell, Republican, New York, for a cooperative national policy on forest conservation were presented to the House Agriculture Committee on January 24-25, when the bill came up for hearings. Representatives of the Forest Service and the National Lumber Manufacturers' Association contended that it would insure a continuous timber supply, while Gifford Pinchot, State Forester of Pennsylvania, said it would place control of the industry in the hands of a few wealthy Pacific Coast timber owners.

District 2 - Rocky Mountain District

White Pine Planting Suspended: The white pine blister rust is slowly but surely spreading over practically all of the eastern United States. The Bureau of Plant Industry has recommended that white pine be planted only when precautions can be taken such as planting in the least susceptible area and eradicating all Ribes from the area before planting, and continuing this treatment thereafter as long as necessary. This would make white pine plantations very expensive, so the Forester has established as a policy the discontinuance of white pine planting on the National Forests in the Lake States for a period of ten years unless adequate measures of control are developed in the meantime.

There is considerable white pine stock on hand at the Cass Lake nursery on the Minnesota Forest; but the sowing of this species last spring was on the basis of 10 per cent of the output. At the Beal Nursery, on the Michigan Forest, there is very little white pine on hand and only 10 per cent of the output was sowed to white pine last year.

Stock Show Exhibit: The Office of Public Relations just completed a very successful exhibit "stand" at the Denver Stock Show, now recognized as the second largest stock show in the United States. This year it drew entries from New York to California and from Canada to Mexico.

The Forest Service exhibit occupied about 500 square feet on the Industrial floor, and was visited by over 24,000 people during the 6-day show. The Forest scene in miniature illustrated grazing, recreation, stands of timber, motoring, scenery, etc., and was considered very "cute" by many visitors. A life-size camp scene with tent in a very natural looking setting of forest trees, small rock fireplace with silken tongues of flame lapping at the coffee pot and skillet brought forth exclamations of "That's the life" and the explainer was asked at least 5,000 times "Is supper ready?" Many visitors were interested in the polished section of Douglas fir log and seemed to get the lesson very readily that "Over 300 years to produce a tree this size, a forest fire would kill it in a few seconds." The collection of enlarged, hand-colored pictures of forest scenes proved of interest to many people and about every 10th visitor said "That's where we were," or "We ought to know that place." The grazing poster showing illustrated statistics caught the usual number of newspaper and magazine writers and thereby paid for the space it occupied.

Creosote Treatment Successful: 561 fire-killed lodgepole pine poles were treated with creosote at Norris, Colorado, in the fall of 1909 and set by the Rifle Light, Heat and Power Company in its line between the plant and town, a distance of twelve miles. These poles were inspected in detail by a representative of the Supervisor's office at Glenwood Springs in November, 1920. 90.3 per cent of the poles were found to be sound after eleven years of service; 3 per cent were partially decayed; and 6.7 per cent were removed because of decay. Decay in the poles affected was usually in pockets and occurred in checks through the treated wood.

District 3 - Southwestern District

Arizona Forestry Association Meeting: In connection with the Farmer's Week program at Tucson beginning January 17, there will be a meeting of the State Forestry Association, at the University of Arizona. A request was made for the District exhibit that was used at Phoenix this year, but we were unable to find funds to ship the material. Assistant District Foresters Marsh and Leopold will give addresses, the subjects being: "The National Forestry Program and Arizona" and "Erosion and Prosperity."

Easier Travel on Gila: "A report submitted from this office to the District Forester recently shows a total of 50.25 miles of minor roads and trails constructed on the Gila Forest during the past calendar year."--Gila Bulletin.

An Historical Document: A bit of ancient history, interesting as general reading, but a little saddening to the spirit of one who has to buy lumber in these days of 1921--or worse, who bought about a year ago, was dug out of files to-day. It is a Forest Service wholesale lumber price list of 1908. In that era Western Yellow Pine No. 1 Common sold in Albuquerque, f.o.b. at $21.50 per M. During the same time at Denver one could indulge his desires for first grade, quarter sawed white oak flooring at a price of $83.00 per M. Happy days!

Petition and Counter-petition: "A petition praying for the elimination from the Forest of a strip of country about 15 miles wide in the vicinity of the Frisco Valley, was recently forwarded to the Secretary. A counter petition has been forwarded, signed by 30 stockmen and landowners, stating that the proposed elimination would mean ruin for them and for the range. It appears that a number of the signers of the first petition are also signers of the second. They claimed that the first petition was signed by them under a misunderstanding of the facts and the second revokes the first petition. The Frisco-Mogollon Cattle Growers' Protective Association initiated the second petition, protesting against the proposed elimination."--Gila Bulletin.

The Literary Digest of January 15 quotes portions of Mr. Leopold's article in a recent number of "All Outdoors" entitled "Game Refuges in a Nutshell."

Arizona Pine Seed: "Schoenberg, who was asked to collect seed of the Arizona Pine (Pinus Arizonica) to send to Dehra Dun, India, says that what few cones he was able to find were in the tallest trees, and that the 'meager supply collected is entirely out of proportion to the labor expended'. The Paradise District has seven pine species."--Coronado Bulletin.

Providence: The hunters prayed for tracking snow: they got it--40 inches at Hermosa, 36 inches at Kingston. Canyons full of timber broken down by the wet heavy snow. Hunters had to chop their way out. It sure saved the life of many a deer.

Teddy Knew: "Wood is an indispensable part of the material structure upon which civilization rests."--Theodore Roosevelt.

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Success is one part dollars, and three parts determination.

District 3 (Cont.)

Index Number and Your Pay Check: Bradstreet's index number for the week ending December 25, 1920, based on prices per pound of thirty-one articles used for food, was $3.51, compared with $3.80 the previous month and $4.99 on the corresponding date in 1919. This is some consolation to the salaried man who has been getting the worst of the deal these past three years, since it indicates that his 1919 dollar is now theoretically worth $1.29 when applied to the purchase of staple food items. Another way of looking at it: if you salted down a dollar in 1919, that dollar earned 29 per cent interest this year. You can even enter the lists of free and wild fancy and deduce that you have had on January 1 of this year a salary increase in the ratio of $29 for every $100 you received a year ago. Go a bit slow in spending that paper increase, though, for remember, Bradstreet is a theorist who sits in New York and talks of the country's primary wholesale markets. Between there and the little store at, say Alpine, Arizona, there are many worthy fellow citizens who act as willing buffers to take up the slack of falling prices so that the drop is not too much of a shock on our salaried ranger at the end of the line.

Bouquets: Speaking of "Efficiency Bill." Bill made the mistake of not securing the services of a press agent. Blessed is he who toots his horn discreetly and in the ear of a sympathetic few; but he who toots his horn before the rabble is indeed to be pitied. Anyway, Bill's tooting has certainly brought to light some Super-rangers. Paul Bunyan will never die an undefeated champion until that 250-pound District 5 phenomenon has returned to dust. I'll bet his frau keeps him in line with a telephone pole, that he drinks milk from a barrel, uses a wagon sheet for a napkin, nails up fire warnings with railroad spikes and a steam hammer and packs an eight-inch howitzer on a caterpillar mount in his holster. Shouldn't be surprised if he brings in his district at night and lays it away with the flag till sun-up. Chances are he goes fishing with a steel cable on a redwood tree, a battleship anchor for a hook, and live elephant for bait. Some baby, and wise! I'll say so.--Gila Bulletin.

Matched Lumber: The American Lumberman makes mention of the marriage of Miss Lavinia Cull to Mr. Herman S. Sapp at Marion, Ohio. It is to be hoped that there is some sound heartwood in this union. We just happen to remember that our presidential timber comes from there.--Gila Bulletin.

District 4 - Intermountain District

Rutledge Back from Trip North: Mr. Rutledge is back in the office this morning from his trip North. He reports that he attended a mighty interesting series of meetings with the cattlemen and sheepmen of Idaho during the first week in January, one very agreeable feature being the interest the stockmen are taking in fire prevention and their offer of the assistance of all their men on this problem. He was also present at the committee of Supervisors which prepared the program for the Supervisors' meeting. The second week in January he went to McCall and had a very satisfactory two-day conference with the Supervisor and other officers at McCall. The fire plans for the year were discussed and the men were taking hold with vigor in their preparation. Mr. Rutledge remarks that there is a very marked activity in that region in the production of ties, the Union Pacific system being desirous of securing all ties possible, and there are numerous individuals and small outfits making ties throughout the region.

Public Relations Work on Wasatch: At a meeting held in the District Office last evening, Supervisor Parkinson outlined to the visiting Rangers and members of the District Office some of the methods which have been followed on the Wasatch in Public Relations work with especial reference to local newspaper work and the cooperative development of the recreational attractions of the Forest. Splendid results along these lines have been secured on the Wasatch under Parkinson's direction and his discourse afforded the men many ideas which can be applied throughout the District.

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"A study course in poker would be a big help to men attendin' Supervisors' Conferences, remarked the Fire Chief last night."

Airplane Visits Toiyabe Forest: Supervisor McGowan, while making a field trip through the Monitor Valley country was surprised upon looking up from his job of driving a Ford over the desert, to see an airplane crossing a few hundred feet from the ground in front of him. A few minutes after arriving at the Mosquito Creek Ranch, Pilot Lewis of the United States Aerial Mail Service landed in the yard and was very anxious to know what section of the world he was in. He stated that he had left Reno the morning before and had been blown from his course and was trying to find his next station, which was Elko, Nevada. He was given the exact location, and landmarks were pointed out to him and in a very few minutes was on his way.

While airplanes are probably very common sights in most parts of the world, this is the first to make landing on or near the Toiyabe Forest and we have decided that as soon as the new salaries are in force to order a machine for our Forest Service work.--Toiyabe News Letter.

Married Men Make the Best Rangers: A debate was held in the District Office building last evening on the question--Resolved, that a married man makes a better Ranger than a single man. The Rangers on detail to the sign shop work were divided equally and each given an opportunity to present his views. The discussion was very heated and amusing and some very splendid points were brought out. The judges, consisting of Messrs. Rutledge, Shepard and Gery, decided in favor of the affirmative. The decision in all probability would have been unanimous had it not been for the fact that one of the debaters for the negative side referred to all the single Rangers and single men in general as Apollos, which so tickled the vanity of "Bish" Gery that he couldn't resist voting for the negative side.

Lions Killed by Biological Survey: The Biological Survey hunters caught 20 lions this month on a trip around the mountain averaging a lion a day from the time they left Ryan until they returned. Only about 6 cougar kills were seen on the trip as the men were continually traveling and weather conditions were such that the lions were caught on the move and in no case were any trailed from a kill. Several kittens were among the 20 caught and as soon as Ranger McCuistion comes back from his vacation so that there will be some one to take care of it, we are going to secure a small kitten to tie up at Jacob so that the tourists can see a live lion next summer. We would take a full grown one, but it would be too much work to rustle feed for it.--Kaibab News Letter.

Major Kelley in Ogden: Major Evan Kelley, Forest Inspector from the Washington office, reached Ogden yesterday. Major Kelley, whose work consists largely of fire inspection in the Western Districts, will establish a field headquarters in the Ogden office. He will probably be with us several days this trip.

A Rare Occurrence: Ranger Lindsay's diary shows that on November 7 he attended church. The fact that Roy entered the item in his diary would seem to indicate that it was an unusual event in his young life. We simply mention it for its news value.--Cache Register.

Employees of Users Prove Big Asset: The stockmen of the District have, as a body, indicated their interest in the protection of the Forests and their desire to assist. The figures given below for the Idaho Forests indicate the immense asset the employees of the users form in protective work if they are properly organized, instructed and equipped so that each grazing employee may render intelligent, efficient service.

District 4 (Cont.)

Idaho Forests	Maximum Force Employed	Grazing Permittees Interested	Herders and Camp Tenders
Boise	21	151	184
Caribou	9	632	399
Challis	16	135	125
Idaho	49	48	117
Lemhi	7	242	125
Minidoka	13	484	136
Payette	41	148	110
Salmon	25	235	141
Sawtooth	14	368	364
Targhee	21	712	371
Weiser	20	308	104
Total	236	3,443	2,176

The Water's Fine: There are already definite indications of a big surge forward in forest information work for 1921. Following Favre's effective series of articles in an Elko paper, we now find Supervisor Beam, of the Wyoming, running a dandy series of illustrated articles on the Wyoming National Forest in the Kemmerer Republican. The Republican editor evidently has come to thoroughly appreciate the importance of the Wyoming Forest, for Supervisor Beam's articles are occupying the center front page space in a series of four issues of the paper.--NEXT!

District 5 - California District

Mather Field Conference. opened Monday, January 17, under general direction of Major B. M. Atkinson, Commanding. Lt. Pardy for the Air Service and Mr.Kotok for the Forest Service are in charge. The conference is to last four weeks and the schedule calls for 6 hours per day, five days per week. Subjects include Radio, First Aid, Flying, Planes, Motors, Aerial Maps and Mapping, Aerial Observation and Reconnaissance, Aerial Forest Patrol Tactics, Operation and Administration, etc.

Stevenson (Cleveland) Clover (Santa Barbara) Marx (unassigned) Mainwaring (Sierra) and Hess (D.O.) are regularly assigned from this District, while D-6 is represented by 5, and D-1 by 4 rangers.

A Warm Combination: We have received notice that the Robbers Roost Mining Company has applied for a patent for the Emma No. 2 Placer Claim located in the Hell Town Mining District.

Why Not Recreation? (Alaska Ranger, reading delayed Weekly Bulletin) "Well I'll be darned! Here's a guy down in the sagebrush who measured a Forest Users wife for a corset and don't know how to charge the time. Insect Control, I'd say."--Six-Twenty-Six.

G. M. Homans, State Forester for California, who had recently recovered from a most serious and painful automobile accident which occurred way last Spring, is now reported in a serious condition. Word received on January 17 indicates that both lungs are now very badly infected and doctors agree that the only chance of cure is to go to the sanatorium at Colfax.

Mr. Homans will undoubtedly appreciate notes from his many friends and acquaintances. He is stopping at Dr. Pierce's Sanatorium, Colfax, California.

Turned Over a New Leaf: A recent circular was sent to all Supervisors with the request that replies be returned by January 15. On January 18, upon checking up, it was found that every reply had been received, and that every question had been definitely answered. A surprise? Decidedly so--but an auspicious beginning for the New Year, also.

The Heliograph: It would seem that there are some who doubt the value of the heliograph for fire protection purposes; if such is the case, I would like to say that as a result of my experience of the past season, I feel that there is only one known thing that could effectively take its place under such conditions as obtain on this District, and that is wireless telegraphy--should a really practicable portable set be devised for both sending and receiving.

In territory not served by telephone lines, the heliograph affords a means of ready communication from all parts of the areas covered by the chief lookout point, and enables one to keep in touch with current conditions and affairs, in addition to making it possible to quickly summon aid, if necessary, while at fires, and to report the progress made in handling them. It enables one to go ahead with one's regular work all through the fire season, even though that work takes one far away from telephones and settlements. Where quick action and immediate help is needed, the heliograph saves many a hard, long ride and many an hour's time.

While to the beginner, the heliograph may seem to be a tough proposition, yet with a proper initiation and a little practice, it becomes more and more invaluable as a means of communication, and speed is only a matter of practice.

By use of the Boulden code, which can hardly be improved upon for fire protection purposes, one entirely a stranger to the use of the heliograph can quickly learn to use it.

True, the heliograph can not be used on very cloudy days, but I myself was able to communicate on two occasions by helio when the sky was overcast and the sun behind the clouds. Just as long as the sun is strong enough to throw even a faint flash from the mirror to the shutter, it seems possible to helio a message.

The disadvantages of weight and cumbersomeness are more than counterbalanced by the ability to communicate with the central point from almost any portion of the District, and through the central point with the outside world.

The matter of cost is a serious consideration; but this is written from the point of view of the man on the ground who is desirous of securing the best and most efficient tools with which to accomplish the most work in the least time.--Cecil R.C.Reindorp--Cleveland.

District 6 - North Pacific District

Good Method of Education: "Inspector Favre is running a series of articles in the local newspapers of Nevada on the subject of deferred and rotation grazing and other grazing topics. This is a very effective means of educating the public on such matters."--D-4 News.

This is excellent. How many volumes of golden knowledge there may be buried in Government publications? And how little will this wisdom help in Forest administration if it is kept safely locked from the public? Let's get some of it out and in circulation, like Mr. Favre is doing, or like Clerk Pratt of the Chugach is doing. Pratt seizes a "news peg" and ties onto it propaganda material from the pamphlet "Government Forest Work" (old stuff to us but news to the average citizen) and hands it out to a local paper. Does the editor use it? He grabs it--eats it alive, uses whole chunks of it as editorials, without changing a "t" crossing or an "i" dotting! From which may be deduced this formula:--

1. Catch your editor--of a county paper preferred.
2. Gentle him--so he will eat readily from the hand.
3. Feed him Service dope--in small doses at first; later he will be able to digest large gobs of it. Don't feed self-praise of the Service--but facts about our organization, our work, our policies. You don't have to grind this out of your head--it's available already in printed form. Use it--that's what it was printed for.
4. After you've done this, you'll find your job as a Forest officer easier, for the public you have to deal with will have a more intelligent grasp of what you're trying to accomplish.--J.D.G.

Cut In Tie Prices: On December 1, the Great Northern Railway issued new specifications for hewed ties. Number 1 and 2 ties had been bringing 80 to 60¢ apiece, respectively. The new schedule now offers 68¢ for number 1 and 45¢ for number 2 ties. This means a great loss to some of the ranchers who had their ties made and were waiting for snow to haul them out over.

This reduction in ties, however, should not influence the price of stumpage on the Colville Forest to any great extent.

Number 1 ties have brought on this forest from 6 to 12¢ apiece, stumpage, and number 2 ties, 3 to 6¢, depending of course on topography, accessibility, etc., so that we have maintained fairly well a minimum stumpage charge of 6¢ for number 1 and 3¢ for number 2 ties. Labor must come down before stumpage, so that we may be better able to judge our stand in our appraisals. We are now facing a readjustment period. The Colville Forest and vicinity being paralleled for so many miles by the Great Northern Railway, furnish one of their main sources of ties, and it is not felt that there will be any great falling off in the demand for stumpage.--L.B.Pagter--"6-26."

Fire Law Enforcement--1920: Fire prevention is of greater importance than fire suppression, for if fire prevention were 100 per cent efficient there would be no need for fire suppression. An important part of fire prevention is fire law enforcement. This work is of increasing importance. In this District, from January 1, 1920, to date, action has been taken on 43 criminal cases, and eight others are now under investigation.

Indian Forester a Guest: Mr. Gilbert Rogers, formerly Chief Conservator of the British Indian Forest Service, was a guest at a meeting of the North Pacific Section of the Society of American Foresters on January 6. Mr. Rogers gave some extremely interesting details of the grazing problems in the Indian Forests--and the magnitude of some of their questions may be gained from the fact that the forests of India have under permit some 12 million head of bullocks and cows, 12 million head of buffalo and 5 million sheep and goats! In the Indian Forest Service in fixing grazing fees a sharp distinction is made between settlers' or villagers' stock and commercial stock; for the settlers' stock a very small fee per head is charged, while the persons who are in the stock business as a commercial proposition have to pay a fee approximately 4 times as high.

Mr. Rogers has visited the United States before and is well known to quite a few American foresters. He is in charge of a party of Engineers from India who are touring the States making a study of American logging methods.

Research Problems Discussed: The District Investigative Committee of D-6 recently held its annual two-day session.

The projects now under way cover the field of silviculture, grazing, products and fire. For instance, Hofmann at the Wind River Experiment Station, is studying among other things the conditions under which Douglas fir and associated species will reproduce naturally; reproduction and methods of cutting western yellow pine is Weidman's pet hobby; Peterson and Ingram in Grazing are tackling such problems as artificial reseeding of burned-over range, natural revegetation, seasons of grazing and grazing capacity, effect of brush fires on forage production, and the influence of grazing on the reduction of fire hazards; Gibbons and Gould in the Portland office and Zimmerman in the Seattle Laboratory are tackling products problems. Osborne is busy on administrative features of fire protection, but not as much attention has been given to the fundamental aspects of the fire problem as we would like. It is hoped that the way will soon be clear to do more of the latter in the near future.

Ranger Study Course; It's going! Questions went out on December 10 and answers have been coming in almost every day since. One or two Forests mildly protested at the extra work it would mean for the rangers for whom there was already a full schedule of winter work planned, but many of the rangers heard from seem to be very glad to have such a course. Every ranger on the Ochoco is taking every course and Supervisor Harpham has this to say: "I doubt very much if there is anything that merits more attention than a careful study of the reading course which is put out." Ranger Wheeler of the Colville writes:

"Isn't it surprising how much we think we know but in reality how little we know when we get to pondering over the questions in the Winter Study Course? Fine work for wintry days and long winter evenings, and besides a great benefit should be derived. I hope the District Office will decide on something along this line again next winter!"

Winter Work: Can winter field work be done in Forests in the Cascade region? Supervisor Rankin calls attention to winter accomplishments on the Crater from which it would appear that "headquarters work" is not in the list of activities and that there is no such thing as an inactive field season. If a Ranger on the Crater wishes to toast his toes, he evidently must wait until bed time.

During the winter seasons of 1918 and 1919, the regular force on the Crater accomplished the following:

Construction of 60 rods of second grade road.
Cut yew wood posts and built 100 rods of woven wire fence.
Built a pole corral covering about 1 acre.
Cut 400 telephone poles.
Constructed a pole line 20 miles long and while doing this tore down and restrung two farmer lines on the poles.
Cut 1,700 red cedar posts for use in stubbing telephone poles.
Constructed 14 miles of a combination tree and pole telephone line.

The work outlined for the current season and which has been underway for some time includes:
Cutting 900 telephone poles with 5 and 6" tops.
Setting 900 cedar stubs and tying the poles to them.
Stringing two wires 32 miles.
Construction bridge, 56 ft. span, 6 stringers, 14" small end, 2 cribs each end ten feet high filled with rock.

How is it done? Obviously by grouping of Ranger and Scalers.

Sometime ago in D-2 an analysis was made of the work of a number of representative District Rangers. The study indicated that the average of effective field days per man does not exceed 100. Nothing like that on the Crater! An analysis of the diaries of the five District Rangers on this Forest for the fiscal year 1920 shows that the average number of field days based on an 8-hour day was 265. This number would be increased were scalers included. It would be decreased if 8 hours were not considered the basis, but certainly not below 200. The average distribution of time expressed in percentages are: Field 69 per cent, office 17 per cent, Sundays, leave and holidays 14 per cent.

I'll take off my hat to the Crater force; it's a "go-get-em" bunch. If there is any Forest in District 6 or any of the other Districts that can beat this record, I am sure the Crater would like to know how it was done. And so would we.--A.O.Waha--"6-26."

District 7 - Eastern District

Salvage Ties: Slightly over one million feet b.m. of salvage longleaf pine has been manufactured into crossties on the Florida National Forest in a sale that is now being closed. The sale was made for dead and down timber only and the operator got out practically 30,000 hewn ties, netting the Government almost $3,500.

Pole Sale: The pole sale to the Baltimore Gas, Electric Light and Power Company on the Natural Bridge Forest, started last July, has all of the earmarks of success. This sale was the first large tranaction of this kind in the District, involving 5,000 poles 35 to 70 feet in length. The purchaser in this case is the ultimate consumer. Since this sale started much interest has been aroused on the part of other light and power companies and it is probable that a considerable sized business can be developed without difficulty.

Preparedness: Acting Supervisor Lufburrow of the Alabama on his recent visit to the district office reported that the Government's gunstock plantation of black walnut, started last spring on his Forest, is prospering amazingly. Lufburrow estimates, however, that if Uncle Sam waits until this plantation is ready to produce gunstocks before going to war that we are in for a long period of peace.

District 7 has three of these munition plantations; one on the Natural Bridge, one on the Nantahala, and the one on the Alabama.

Toredo Work: The Florida National Forest has in its woods the far-famed razorback hog and in its waters it has the notorious razor-tailed worm, commonly known as the toredo or ship-borer. The two boats recently taken over by Ranger McKee at Key West for the Alaska District have suffered from the attack of the toredos in Florida waters to an extent that will probably require extensive repairs before the boats are thoroughly seaworthy.

Forest Plans: The management work on the Arkansas Forest is progressing under a full head of steam. Forest Examiner Shaw and his party will probably be able to complete four working circles by the end of the fiscal year, making seven in all which have been completed and put under authorized plans of management.

Personnel: Mr. H. G. Spahr, Supervisor of the Cherokee Forest since 1918, and previously engaged in Acquisition work since 1912, is the latest member of District 7 to respond to the call for outside work at a more remunerative compensation. Mr. Spahr's old friends and associates wish him all success in his new work. Mr. Sidney H. Thompson, one of the pioneer acquisitioners in the Southern Appalachians and White Mountain region, is receiving congratulations upon his assignment as Supervisor to this busy and growing Forest.

SERVICE BULLETIN

U. S. Forest Service

Washington, D. C. - February 14, 1921.

(Not for Publication)

WHO OWNS THE REDWOODS?

By Harry Donald Tiemann
(Forest Products Laboratory)

Oh mortal man, and shall it be?
  Can you destroy the Redwood Tree?
Whose glory stood from ages past
  And shall for untold ages last!

Can man's brief threescore years and ten
  Own soul and body now, what then
Three thousand years, long long ago,
  The Power received to live and grow?

A heritage to all mankind
  A sacred trust to keep enshrined
Protected from all ills and wrongs
  From God received, to God belongs!

Eight Hours--Unclassified

Efficiency is a wonderful thing; we all probably try to attain it. Working Plans and Schedules of Work have their uses. Diaries come in the Fores Service scheme. Most field officers in small communities, who try to be neighborly and helpful and at the same time follow their Schedules of Work and keep their diaries up, oftentimes have troubles that Inspectors don't dream of. Here's an Oregon Ranger who had his.

The Supervisor wanted to know why his diary wasn't in more detail; the Ranger told him.

"You have no doubt noticed that I have been charging a large portion of my time as Miscellaneous Headquarters Work. I have been bunching the work this way for convenience, as that seemed to cover many jobs and to list separately every job of fifteen minutes or half-hour during a day would make the diary bulky and require considerable time.

"During the past season I have never had to worry about finding something to do 'tomorrow' or 'next week.' Instead I have at numerous times taxed my wits to pick out the important jobs that could be left undone to provide time for doing more important ones. Yet since you mention it, I can see that a person reading my diary and having no other source of information would most likely get the impression that I was simply killing time, with nothing to do.

"As you know, the larger part of the headquarters work during the past several months at Beaver Station was made necessary by the building of the new highway. The road builders tore away fences and other improvements and left trash, broken posts, parts of stumps, fence wire and litter of all kinds in their trail to be cleaned up by me. In this way a great deal of my time was taken up without making a showing.

"It very frequently happens that a day is entirely lost from the plan of work that each of us has. Perhaps I would start in the morning on a job that had been planned in advance for the day and the following is typical of the way it turns out:

"As I begin work Engineer Smith comes along and requests that I walk up the road with him and inform him whether his plan for rebuilding the irrigatin ditch which the road builders had destroyed would be satisfactory. We spend a half-hour looking the ground over and talking over details. Mr. Smith uses up fifteen additional minutes telling about some experiences on the battle front i France during the World War.

"I receive a call to the telephone and spend fifteen minutes getting connected up with my party and five minutes in conversation (it is not at all unusual for me to spend an hour during a single day at the telephone on official business). I start out to work, impatient at the delay, hang my coat on a post just as a man arrives very much exhausted. His Ford is stuck in the mud on the Fish Creek Hill. He explains that it never acted that way before but his engine is 'not working right.' 'Will I help him?' Sure! I help him out and if we are lucky and do not have to tinker the car too much I get back to work and upon looking at my watch am surprised to find it is 11:45 a.m.

"I have just noticed that a bunch of Bar B cattle have broken into the pasture and proceed to saddle a horse and chase them out, and get into dinner a half hour late. My wife wants to know why I did not split some wood before I went 'chasing those cattle.' I try to explain, get balled up and make a mess out of it; then go back to work with the family relations more or less strained.

"Just as I get my coat hung on the post and my gloves on, Ryan, foreman for the contractors on the highway, arrives and would like to borrow my steel tape to measure some culverts. He only wants it an hour or so. Ed Black rides in on horseback at this time and he feels very badly about the manner in which the Forest Service manages the grazing business. He offers some suggestions as to how we could make things better in his particular case, spends thirty-seven minutes telling me what a bum Ranger I am and how the Forest Service is conspiring to put him out of business; gets the load out of his system and goes his way feeling better.

"I am called again to the telephone to explain to Mrs. White the only way to corn beef, and to Mr. Green what to do for a sick horse. Mrs. White takes up fourteen minutes of my time and Mr. Green exactly eight. While I am thus engaged Jones' dogs chase a bunch of cattle through the fence, tearing down eight panels and I work until dark cobbling it up again.

"I sit down to write up my diary for the day. I begin to enumerate the many things done and decide that if I write all this stuff that pretty soon I will need help to carry my diary, and I am tired and don't feel like writing anyway, so I enter it as follows:

'Did miscellaneous headquarters work--Unclassified, 8 hrs.'

and it is all over."

(Note: This is an unsigned article from D-6. It would not be published except for its interest. Authors will please sign all articles sent in.--Ed.)

"Spite - o' - H-11 - ers"

By L. S. Murphy, Washington

If I may, I should like to pay my compliments through the columns of the Bulletin to the sentiment appearing in the issue of January 3 as follows: "Some people get results if kindly encouraged, but give me the man who can do things in spite of H-11."

The time has long since passed when thinking men and women can let the expression of such sentiments go unchallenged. One need not look very long nor very far to see what a mess these "Spite-o'-H-11-ers" have made of this old world of ours, which they have been managing since the time when "the memory of man runneth not to the contrary." Even if we subtract the Great War and all other wars besides from their score, yet is their peace time record any the less unenviable?

Nor is it necessary to go to any length to point out the many reasons why they and their sometime ruthless methods have not done better. The multitude of things needing to be done and the relatively few "Spite-o'-H-11-ers' to do them is reason enough. And being only human these latter do the thing closest at hand and most profitable to themselves and let the rest go hang.

"Look out for the pennies and the dollars will take care of themselves" is a trite and true saying, which loses none of its force in being thus paraphrased: "To get results look out for the people who need kindly encouragement and the 'Spite-o'-H-11-ers' will look out for themselves - first, last, and always."

Land Exchanges in the National Forests

By L. F. Kneipp

There are probably few field officers of the Forest Service who are not embarrassed in their administrative work by the existence within the unit under their control of some part of the 24,267,723 acres of privately-owned land now within the National Forests. Their intimate contact with the land brings home to them the deplorable results due to lack of management and of fire protection and they appreciate the frequency with which ambitious plans are wrecked or made ineffective by the existence of lands which the Forest Service can not and the owners will not manage.

The land exchange work is rapidly taking a form offering optimistic promise of the successful solution of at least a portion of the private land problem. Beginning with exchanges with several of the Western States, the work, under authority of acts of Congress, has extended to numerous exchanges with private owners, so that principles and procedure which have stood the acid test of actual application have been evolved. Congress has not yet seen fit to approve the general Exchange Bill introduced in 1919, but its attitude is not unfavorable and the increasing familiarity with land exchange work which it is gaining in its consideration of specific bills is creating a feeling of confidence and understanding which will inevitably reflect itself in some liberal form of legislation.

For the time being the initiation of a land exchange involves the preparation and introduction of an act of Congress authorizing either a specific exchange or granting general authority to make exchanges within a specified National Forest. The Forest Service does not initiate legislative action. Its function is merely to report at the request of the Committee on Public Lands upon bills pending in Congress. The owner of private lands who desires to exchange them with the Government must therefore bring his desires or requirements to the attention of his representatives in Congress with a request for legislation offering equitable conditions of adjustment. Obviously there should be no commitment of the Service to an exchange in advance of legislation or of appraisal. Interested parties should be informed that when legislative authority is secured the Service will be prepared to take up negotiations concerning specific exchanges.

From our point of view the acid test of an exchange is that it must be to the public interest; so that the gain to the Government will warrant the expenditure of time or money necessary to consummate the exchange. Trades will not be made to benefit a private owner whose scattered holdings can neither be sold nor utilized to advantage, but will be made solely as business propositions on the part of the Government and as such will be handled under principles of good business negotiations. In the majority of exchanges made or proposed both the Government and the owners of the private land have benefited or will benefit. This record must be maintained.

The pioneer land exchanges, principally with the States, imposed the obligation of equal area and equal value. The balancing of these two factors in each case necessitated careful adjustments which often obscured the fundamental purposes of the exchange. More recent exchange legislation has prescribed equal value only, thus broadening the field of exchange work without any sacrifice of public interest.

Several forms of value are grantable by the Government, namely, stumpage in place, stumpage certificates, untimbered land and timbered land. The use of mature and merchantable National Forest timber as a means of extending systematic forest management to additional areas of timber-producing land seems to be the most logical course to follow. The timber being removed under regulations prescribed by the Secretary of Agriculture, the lands from which it is cut are left in the best possible condition for the production of another crop. The consideration being a product of the forest rather than a demand upon the Federal Treasury, the transaction assumes the aspect of a betterment paid for out of the surplus of the business. The value of a stand of mature timber being many times the soil value of the land upon which it stands, the acreage of National Forest land increases progressively with each transaction.

The timber certificate offers many advantages to the owner of private land, particularly the small owner who is not in a position to utilize stumpage in place. Certificates good in lieu of cash in any timber sale in the Forests of the same State would have a negotiable value permitting their ready liquidation if that were necessary. This form of consideration for land offered in exchange has not yet received sanction by Congress, but may in course of time be recognized as a desirable procedure.

The exchange of non-forested lands of high grazing value, lying in close proximity to the exterior boundary of a Forest, represents a good trade in any case where the acquired lands are timber producing. The exchange of outlying lands of low timber value for interior lands of high timber value increases the timber-producing power of the Forest and is therefore desirable.

The exchange of National Forest land bearing commercial timber is really the least desirable form of exchange, although distinctly to the public interest where it affords a means for acquiring a materially greater acreage of cut-over land.

One of the difficult questions presented by an exchange is that of valuation of the offered lands. The one cardinal principle which must govern all of our determinations of value is that the Government will not pay any more for a given tract of land than that tract can be purchased for in the open market by any other purchaser.

The first element of value is that of the land or soil. Ordinarily that is determinable by comparison with sales made under competitive conditions in the open market. The value of the mature timber is determinable under the methods of appraisal followed by the Forest Service in valuing timber on National Forest lands. Young growth presents a more perplexing problem. That second growth has a real value to the Forest Service is unquestioned. The existence of such growth may be one of the impelling considerations in the acquisition of a given tract of land.

Under existing conditions it must be recognized that except in a few very limited regions, there is no purchaser, unless it be the State or the Federal Government, that is in a position to carry on the forms of forest management necessary to realize the intangible values of a young second growth stand, so that the propriety of attaching a financial value to a commodity which in the open market has no such value might very properly be subject to serious question. As a workable rule it may be pointed out that if an owner of cut-over private land is willing to sell it to another purchaser at $2 per acre there is no reason why the Government should pay $4 for it, even though some rule of appraisal might be cited to prove that it has a higher valuation to the Government.

Land exchanges are made on the basis of giving equal value for equal value. The government land is appraised at its value to the United States or its sale value. It may be worth much more to the exchange applicant for some special reason; but the value is not raised on that account, the difference being the margin which makes the exchange attractive to the private owner. Conversely, the privately-owned land is appraised at its value to the owner or its sale value. It may be worth much more to the government--as in the case of land having a thrifty young growth which is without sale value or realizable value to its owner--but that higher value to the government is the margin which makes the exchange desirable in the public interest.

In some exchanges water-power values demand consideration. Where such values are nominal and may be determined by acceptable engineering formulas they may be taken into consideration.

The value of aesthetic features may be considered only to the extent that such features enhance the commercial or market value of the property and do not represent an excessive proportion of the entire value.

A land owner can not sell his ability to make a nuisance of himself through misuse of his land, consequently the elimination or abatement of a nuisance is not a factor of valuation; therefore no price concession can be made because of the existence of a nuisance or hazard on the private land.

The owner of the private land can not capitalize in the open market the convenience of administration which the Forest Service would secure through the acquisition of his land; therefore administrative convenience is not a factor of valuation and should not influence the appraisal of offered land.

The foregoing are simply the "high lights" of the land exchange work. In considering a specific transaction many qualifications are necessary. The idea of this article is merely to indicate the possibilities of land exchange work as a factor in the development of the National Forests so that each Forest officer who is confronted with the problems created by the existence of privately-owned land may recognize land exchange as a practicable and highly advantageous method of meeting the situation.

All Stand and Sing

Oh, say can you sing from the start to the end
What so proudly you stand for when orchestras play it?
When the whole congregation, in voices that blend,
Strike up the grand tune and then torture and slay it,
How valiant they shout when they're first starting out,
But "the dawn's early light" finds them floundering about;
'Tis "The Star Spangled Banner" they're trying to sing,
But they don't know the words of the precious, brave thing.
Hark, "the twilight's last gleaming" has some of them stopped,
But the valiant survivors press forward serenely
To "the ramparts we watched" when some others are dropped,
And the loss of the leaders is manifest keenly,
Then "the rockets' red glare" gives the bravest a scare,
And there's few left to face "the bombs bursting in air."
'Tis a thin line of heroes that contrives to save
The last of the verse and "the home of the brave."--Anon.

Our Old Friends--The Southern Pines

By W. R. Mattoon--Washington

The importance of longleaf pine comes about by its large contribution to the yearly output of lumber, rough timber products, and naval stores. In another way longleaf commands considerable attention because of the 25 to 50 million or more acres of denuded and practically idle cut-over lands on which it formerly thrived, and would again if given a chance.

In connection with the extraordinary seed crop of the past fall, previously reported in the Bulletin, it is gratifying to learn of prevailing favorable moisture conditions which have resulted in a heavy germination of the seed, and millions of young trees. Reports have been received of a "new kind of grass" coming in, based upon the observation of dense masses of the green seedlings. If only a fair measure of fire prevention and protection from razorback hogs can be afforded during the next 2 to 4 years, the South will undoubtedly come through with millions of acres of well-stocked young forest.

The establishment of young growth so soon after the fall of the seed illustrates an interesting characteristic of longleaf pine seed. Under usual weather conditions it is known to germinate in 3 to 5 weeks after it falls fro the cone. Two tests, conducted recently by the Forest Service, of a sample of longleaf seed collected last autumn on the Florida National Forest, gave results of (a) 68 per cent germinated complete in 12 days and (b) 72 per cent in 15 days. The seed is large, containing much food in the form of starch and oil. Indications are that if artificially stored, changes occur which rapidly lower the vitality of the seed. The large store of food accounts for the seed being readily preyed upon by insetcs, birds, rodents and the ubiquitous "razorbacks."

So far as known, no other species of pine shows quicker activity in the process of establishing its seedlings. Slash pine, an associated species, like the longleaf pine, normally germinates in the late fall and both appear to withstand the winter freezes with very slight losses.

Silvicultural practices with both species of pine follow closely nature's method, and fall sowings have resulted in the best stands. Thus far exexperiments conducted with longleaf pine on the Florida Forest have given fair results, while gratifying success with sowings of slash pine has resulted on the poor wet, "craw-fish" lands in the coastal plain of South Carolina.

The Great Southern Lumber Company of Bogalusa, La.--probably the largest operator in the South--has the distinction of being the first concern to reforest cut-over lands on a commercial scale by seed sowing methods. This past fall it collected 4,000 pounds of longleaf pine seed, 1,000 pounds of loblolly, also seed of slash pine which here reaches its extreme western limit. About 540 acres of fenced land was plowed in strips 8 feet apart, each consisting of several furrows. Seed was then sown broadcast on the strips and worked into the soil by harrowing. The cost was reported as 50¢ a pound for collecting longleaf and $1 for collecting loblolly seed, 15¢ a pound to broadcast the seed and 32¢ an acre for drilling or harrowing. The plowing was done with one horse plows by farmers hired late in the season after work became slack on the farm. The heavy grass cover was burned off before operations began and it is the plan to keep fires out by means of fire lines and other protective measures. Seeding is being done only where no seed trees occur, as it is the purpose of the company to let nature do the planting wherever possible.

First and Last Notice

If you want your stuff published in the Bulletin--make it short and snappy; otherwise it is doomed to oblivion.

News items should run from ¼ to 1 page, double space; the latter only for exceptionally interesting news.

Articles and stories; 2 pages, double space, for ordinary stuff; 3 pages for good ones; 4 pages for material of Service importance, and for something that's outstanding and big--anything you want to write. You're the judge as to quality.

Get this through your head: What interests and concerns you, doesn't necessarily cause undue excitement among all the rest of the fellows. Also, that your particular part of the Forest Service machine isn't the whole works.

The Rangers are beginning to send in items. That's the stuff we want. You know what you like to read in the Bulletin--chances are the other fellows like the same things. So come on with that bit of news or story.--Editor.

Out of the Tall Timber

Ecology and Surveying: At a recent meeting of the American Association for the Advancement of Science at Chicago, Dr. H. C. Cowles of the University of Chicago read an interesting paper on "Ecology and Geographic Boundaries," showing how by the counting of rings on tree blazes the original date of survey could be checked or even determined. Such studies are now helping to solve the question as to the location of the boundary between Texas and Oklahoma. A case of special interest is known as the "Lake Case" in connection with the public land surveys in Arkansas. The surveying crews received twice the pay for meander lines that they did for straight lines. As a result their maps had frequent meanders around lakes which were mythical. Later, after homesteads were taken up around these mythical lakes, various lumber interests, by acquiring "riparian rights,"claimed the "lakes" and the valuable timber standing in them. It then became necessary to determine whether lakes actually existed at the time the survey was made. Dr. Cowles used the records furnished by the rings on tree stumps to answer this question. He found oak stumps 500 years old within the supposed lake area, which was good and positive evidence of the non-existence of the lakes during the past several centuries. There were also stumps of cypress, but he was able to show that they grew on comparatively dry land and not in the water. Some larger cypresses, which did show evidence of having grown in water, were shown to be approximately 1,500 years old.--W.N.S.

You're Next!. We are prone to believe that the successful development of the recreational utilities of the National Forests is dependent almost wholly upon large future appropriations by Congress. There are places where this is true, and then on the other hand there is District 5, where it is not. The "News Letter" from that District, under date of January 29, with a modesty not wholly natural to the District, sets forth a record of real achievement in recreational development which is truly encouraging.

Other Districts may focus their eyes upon the amount which the Service contributed to the work, $15,302.40, and explain that if they were furnished with that much money,for recreational development they too would transform the beauty spots in their Districts into examples of sanitation and comfort. The point is, however, that the expenditures do not represent allotments by the Forester for recreation work; they represent savings in the form of contributed time! ingenious uses of what otherwise would be unused effort or money.

Then look at the cooperation secured, $8,984.98. Interesting a man to a point where he will spend his own money in furthering a public use requires ability, patience and perseverance, but D-5 shows that it can be done. Who is the next District Forester to show that the life-insurance business lost a star when he went into Government service? For the benefit of those who did not see the D-5 "News Letter," the article mentioned follows:--L.F.K.)

"Public Camps: During the past season 14 new public camps were developed in the California National Forests and additional development work was done on 20 old camps.

"The improvements constructed consisted of 62 latrines, 43 garbage pits, 34 incinerators, 42 fire places and 359 tables with benches. In addition the underbrush was cleared on 10 camps; a water supply developed at 8 camps; fence, road, trail or bridge work done at 10 camps; a bath house and 4 concrete bath tubs built at 1 camp; and cupboards, shelves and signs put up at most of the camps.

"The actual cost of the work done on these 34 camps was $24,287.38 of which $8,984.98 was contributed by cooperators and $15,302.40 was Forest Service funds, mainly contributed time of Forest Officers.

"In addition to the cooperation noted above, a 23-acre camp at Lake Tahoe, valued at $25,000.00 was presented to the Forest Service by Wm. Kent, and Camp Cajon on the Angeles was developed by numerous cooperators at a cost of $25,000.00 to date. Including unexpended cooperative funds, free use of land for camp purposes, etc., the value of the cooperation given us last year in development of recreational resources was not less than $60,000. If we can get some special funds for recreational development work to use as bait next season it will be increasingly easy to secure cooperative funds."

A New Occupation: Research men are beginning to realize that it pays to advertise. The October report from the Fremont Experiment Station, near Colorado Springs, states, "****It is estimated that between 500 and 1,000 tourists were shown some of the work of the Station. Many of these were merely curiosity seekers who carried away nothing, but it is believed fully half of them obtained and held some idea as to the aims of technical forestry." Picture our old friend and Silviculturist, C. G. Bates, dropping page 99 of his preliminary report on "Light or Radiant Energy as a Factor in the Distribution of Species" to herd a lot of "dudes" and explain the why and wherefore of this and that experiment. But this is just the kind of work that is going to "sell" research work to the public, and when you come to think of it, the common folks have a lot to do, now-a days, with the success or failure of any enterprise.

Fixin' It Up: The grandest indoor sport in the world, and the 12-month pastime of many Forest officers, is that stirring little game of "Fixin' It Up--"It" in this case meaning something that someone else has done.

The Ranger writes a report; the Supervisor fixes it up and sends it to the District Office; here someone takes a crack at it and forwards it to Washington, where it receives the final going over and, perhaps, lands in the Department. During this tortuous journey many of the statements are revamped, reworded, or shaped to fit the individual opinions, etc., of the reviewer, so that the finished product may or may not bear out the ideas of the original author.

Why is all this "fixin'" necessary, or is it necessary? Granted that there is a "best way" of saying and doing everything, and that we want all our stuff in the best possible shape and language, the question still remains. Is not this fixing game in many cases largely a matter of habit; of thinking that no one can do things quite as good as we can, and that if someone does happen to do it right, it is merely a coincident? Boiled down--Are the results worth the time and effort, and how much do we gain by it?

"Trifles make perfection, but perfection is no trifle," is a good motto, but it needs to be rightly applied to produce results.--W.H.

New Legislation in Congress

And Still They Come: On February 1 Senator Overman (N.C.) introduced an amendment to the Agricultural Appropriation Bill for a forest experiment station at Asheville, North Carolina.

On January 31, Mr. Walters (Pa.) introduced a bill (H.R.15950) for the establishment and maintenance of a forest experiment station in the State of Pennsylvania.

National Forest Additions: Bills reported by the Senate Committee on Public Lands, January 31, authorized additions to the Weiser, Nez Perce, Targhee and Lemhi National Forests, all of Idaho.

Good Roads Bill: On February 7 the House passed a bill (H.R.15873) to authorize the appropriation of additional sums for Federal aid in the construction of post roads. Under its terms one hundred million dollars may be appropriated for the fiscal year ending June 30, 1922, and three million dollars for National Forest roads and trails. However, the bill as passed means little or nothing, since no funds are actually appropriated for any form of road work.

Washington Notes

Addition to Shasta: On January 31 the President signed an Executive Order consolidating the Shasta Forest and certain portions of the Lassen Forest lying south of Pitt River, California, designating the combined area under the name Shasta National Forest. The order becomes effective July 1.

Visitor: Mr. J. W. Obyrne, of the Virginia State Forest Service, Charlottesville, Va., was a recent caller at the office.

New F. S. Movie: "Up to Hyalite," a new Forest Service scenic taken on the Gallatin National Forest, Montana, made its premiere on February 4 at the second monthly meeting of Department of Agriculture employees.

Notice for Authors: Stories and articles for which approval for publication is requested should be forwarded the Forester in triplicate, since the original is returned to the author, first carbon retained by the Department, and second carbon by the Forest Service.

Alaskan Movies: James Oliver Curwood's motion picture drama entitled "Isobel" or "The Trail's End," an Alaskan story filmed largely on the Leadville National Forest, Colorado, appeared in a local theater last week. The outdoor scenes resemble the Northland very closely, but the lodgepole and yellow pine "gives it away" to a trained forest man. Some wonderful glacier views of Alaska, in colors, add to the attractiveness of the picture.

Progressive Riders from Washington: The men from Washington who are attending meetings of Supervisors this winter are describing tracks across the continent that are decidedly unprogressive. Progressive riding by Washington office men is just as important as progressive riding by Rangers, and it will be necessary in future to have any Supervisors' meetings that may be held arranged in series so that visitors from Washington may attend them with a reasonable expenditure of time and travel cost. Unless someone suggests a better plan Washington will arrange next winter that each District, beginning with 2 and ending with 4 via 3, 5, 6 and 1, shall each be given a week, starting about the middle of January, in which they may hold a Supervisors' meeting if they wish.--Roy Headley.

Not in the Dictionary: A list of technical and local words used in the lumber trade in Austria and vicinity, together with their translations and explanation of their equivalents in English, has just been received from District 4. It was prepared by F. S. Baker. For those who are translating, or may have occasion to translate, forestry or lumbering articles of the South Central European countries this list will prove a welcome aid. Copies can be borrowed at any time on application to the Forester.--J.K.

District 1 - Northern District

Joint Conference: Beginning Friday, January 21, and ending Monday evening, January 24, the joint allotment and administrative conference was held in the offices of the Beartooth Forest at which were present, District Forester Morrell, Assistant District Forester, Stockdale, Executive Assistant G. I. Porter, Assistant District Forester G. A. Smith, Supervisors Clark, (Gallatin); Shaw, (Absaroka); Whitham and Deputy Supervisor Stanton, (Custer). District Forester A. S. Peck; C. M. Granger, Chief of Operation; and District Fiscal Agent, J. I. Buckner of District 2 were also present, for one day.

It was the first joint conference of eastern Supervisors on allotments and administration, and is considered a success, and of invaluable importance in the administration of eastern Forests where conditions are similar.

The important feature brought out in connection with the tentative allotment of funds was the weighing of one Forest's needs against the others and votes cast by the Supervisors as to which Forest would be more benefited by receiving preference in the allotment of funds, especially in the "GE, Improvement" appropriation. It is felt that with four Forests represented, it would be impossible for the feeling to exist that one Forest got more money than the other, without a fair shake.

Envy? We notice with envy the fine record chalked up by the Gallatin National Forest for planting fish fry in the lakes and streams adjacent to and within that Forest, and pause to ponder if perchance the fact that the Federal Hatchery being located at Bozeman has anything to do with that record. Would the same record be made if the Federal Hatchery were located in Great Falls or Kalispell, for instance? What causes this deep thinking is the fact that 100,000 fry was applied for from the Federal Hatchery to plant in a stream on the Jefferson National Forest, and behold when the fish arrived there were but 3,000 and we wondered why, but--go to it, Gallatin, get the fish in, that's the big idea!--A. L. Geddings--Jefferson.

Essentials of a Report: Supervisor Shaw has achieved the remarkable feat of making a very interesting "illuminated" story out of report covering an investigation on the Elk situation; the edition d'luxe is before us.

It may be said that the making a story out of investigative material is difficult because story writing demands the use of description and narration while reports must be mainly in the form of exposition. Mr. Shaw has skinned the horse with the adze and produced a very fine piece of work--our hat is off.

Stories are written mainly for entertainment. They cater to man's reflex attention; while reading a story a man's mental battery is being charged. In reading a story a man rests and generates mental energy; in reading an ordinary report in the form of exposition his mind is discharging energy. Children must learn mainly through stories because their minds are incapable of concentration. I do not mean, of course, that this is the case with reviewers. I am just stating a fact.

The delight and stimulus in reading a report on scientific investigation is found in the orderly arrangement and proper weighting of material, choice of words and sentence structure, absence of useless verbiage; mastery of the subject, clear cut presentation, solid buttressing of data, and above all in the display of a keen reasoning intellect. Illustrations are mainly to avoid or make descriptions clear.

I think there are some subjects which can well be put in story form and there are others which can not and should not be so treated.--J. A. Larson.

District 2 - Rocky Mountain District

Recreation Approved: The Board of Directors of the Colorado Mountain Club at a meeting held in Denver on January 13 went on record as favoring the appropriation asked for by the Forest Service for recreation purposes, and the Secretary of the Club was instructed to write the Colorado Congressman to that effect.

Open Winter in Michigan: The most open winter since 1878 is the report of the old settlers in northern Michigan. At the present time large portions of the lower peninsula are without snow and some places even in the upper peninsula are also without snow. Lumbermen in many places have closed their camps fearing that they will be unable to move the material already cut. The swamps are not frozen which will prevent the movement of cedar posts, ties and pulpwood even should heavy snows later occur. Operations have now been closed down at Boyne City, Oscoda, Alpena, Mackinaw City and other places in the lower peninsula, as well as at Escanaba, St. Ignace, Moran, L'Anse in the upper peninsula. The cclosing of the camps and the heavy movement of labor from the cities to the woods because of unemployment everywhere, has occasioned a cut in wages, usually averaging 15 per cent.

More Telephone Engineers: Telephone Engineer Kylie has just returned from Deadwood, where he turned out 11 more telephone engineers; 5 from the Harney and 6 from the Black Hills. The work was done in the Federal Building at Deadwood, South Dakota. It took eight days and each of the men was required to take a telephone to pieces and put it together without having any parts left over. The theory of each part was explained and each man was frequently quizzed during the course as to what he knew about it, and finally had to try an examination.

District Office Meeting: The fourth meeting of the personnel of the District Office was held on February 2. Assistant District Forester Stahl gave a brief outline of the work covered by the Office of Lands which was followed by two motion picture reels which were taken by the Missouri Pacific Railroad Co. on the San Isabel Forest last summer.

Forest Service and States Cooperate: The District has been cooperating with the State Forester of Colorado and the Land Board in drafting a State Forest code. This proposed code brings together all legislation relating to forestry and fire protection work; provides for more definite responsibility for the Forest Fire Wardens; disposal of slash resulting from cutting of timber on private and State lands, adequate laws relative to installation of efficient spark arresters on railroad locomotives, and additions to the laws relating to railroad fires. The bill has been introduced in the Legislature and favorable action is looked for during the present session.

District Forester Peck and Assistant District Forester Thompson had a conference this week at Cheyenne with the Commissioner of Public Lands and the Commissioner of Immigration relative to forestry extension work in the State of Wyoming. While it is not likely that it will be possible to secure the appointment of a State Forester and State Forest Fire Warden at this session of the Legislature, from the present outlook, the duties of the Chief of the proposed new Wyoming Department of Agriculture will be sufficiently broad to enable him to cooperate with the Forest Service in extension and fire protection work. Plans were made to secure the introduction of a bill providing for the disposal of slash on state and private lands, defining the requirements relative to spark arresters on locomotives operated in the state, clearing railroad rights of way, reporting fires by railroad officials, and responsibility by railroads operating within the State for fires starting on the rights of way.

Laws similar to those suggested for Wyoming have been submitted, through the Forest Supervisor at Custer, South Dakota, to the Superintendent of State Forests in South Dakota, and it is expected that definite action will be secured in this State.

Studying Recreation Plans: W. B. Rice, in charge of Entry Surveys in District 4, is spending a few days in the District Office going over the recreation work which has been accomplished by this District.

Rangers Meeting in Wyoming: A joint Rangers' meeting between the Bighorn, Shoshone and Washakie was held at Sheridan, Wyoming, January 28-31 immediately following the Allotment Conference of the executive force of those Forests and the Black Hills and the Harney. It was possible to represent the District Office pretty well and some members of D-1 attended for a couple of days. From the enthusiasm displayed and the nature of subjects discussed, it was very apparent that great progress has been made by the Service during the period which has elapsed since the last Rangers' meeting which was held in Billings, Montana, in 1916.

Only questions of policy and the broader aspects of the subject of forestry were presented. The meeting compared favorably with Supervisors' meetings. One noticeable feature was the interest which the citizens of Sheridan and the Commercial Club took in the meeting, and the entertainment which was given those in attendance during the entire period. The men were made to feel that the town regarded the conference as one vitally affecting the business of the community.

Fish and Game Club Organized: The Boulder County Fish and Game Club was organized at Boulder on January 28 by 70 representative citizens from different parts of the county. The Club plans to develop the fishing resources of the county. All allied clubs and organizations in the county will be affiliated and in turn the Boulder County Fish & Game Club will affiliate with the Colorado Game Protective Association. The Club will have a Board of Directors selected from the local organizations at the ratio of one for every 100 members, and there will be five directors at large.

Promotions: District Forest Inspector Wm. R. Kreutzer of the Gunnison National Forest has been promoted to Forest Supervisor of the Colorado National Forest. Mr. Kreutzer has been in the Forest Service for 22 years.

Forest Examiner Charles Steuart of the Gunnison National Forest has been promoted to Forest Supervisor of that Forest.

District 3 - Southwestern District

Weighing Frost: Have you ever weighed hoar frost? Found out how far the white whiskers on a pebble picked up on a wintry morn will push down the scales? It's been done. Pebbles weighed in the morning with frost on them and again in the afternoon in an air dry condition, showed a difference in weight of 2 per cent. Frost as a contributor to soil moisture is being considered in certain studies at the Ft. Valley Experiment Station. --R.S.

"Ranger Gage has completed the compilation of the timber cut by sections on the S&M sale for the past year and returned to the camps on Friday. This report shows, on the Government sections, a cut of 5,571 board feet per acre and 2,602,540 feet per mile of steel. On the timber rights sections it shows a cut of 6,540 feet per acre and 2,949,400 per mile of steel."--Tusayan News Letter.

Forester's Uniform: They certainly make them distinctive in some European countries. Calling them distinctive is merely a polite term when applied to an illustration showing Italian foresters in uniform, printed in a bulletin on European nursery methods, issued by the State of New York about 1908. Gold embroidered caps with shiny vizor; coats with gold buttons and much braid on the sleeves, shoulder straps and various service and rank insignia; long trousers bestrapped and braided--and swords! The trappings may be all right for job to job travel and going to town for mail and supplies, but our imagination fails to supply any possible use for the side arm the Italian forester carries. (They found good use for them a couple of years ago.--Ed.)

Geography Epidemic in Green City: Recently the office of Public Relations has been bombarded with requests from the school teachers of Green City, Mo., for "pictures, illustrative material, maps, etc., that you may have, which will enable me to teach more successfully the geography of the United States." They all read alike, practically word for word, and we are not sure whether we are the object of bona fide requests or are being experimented upon by some amateur psychology club of Green City. If PR were a young, susceptible eligible there might be another objective, since so far, all requests have been written in feminine hands and the signatures all prefixed by Miss, emphasized by enclosure in brackets. List of our correspondents furnished on application direct to this office. No fee.

A Laugh From "Life"; "Life" overlooked a few of them:

The sheepman will vote for the yew.
The dude for spruce.
The courting youth for "Cedar."
The sweet young thing for gum.
The mechanic for pinyon.
The contortionist for limber pine.
The prize fighter for boxwood.
The politician for pop'lar.
The undertaker for weeping willow.
The poker fiend for gambel oak. --W.S.--Manzano.

Frenzied Mathematics: Reference to your want ad. a "Mathematics Shark." This is too easy--the U.S.G.S. meant simply that .000523 inches are eroded from a square inch of area in a year and passed on to the ocean. Roughly then, if no litter replaced it, the forest floor would loose a cubic inch of surface in 2,000 years. Ordinarily erosion then hauls off a wagonload annually from ten acres or 64 loads from a square mile and makes no charge for the service.

District 3 (Cont.)

Humor from the Musty Files: "There is no authority for the Forest Service to pay damages for injuries done by a government mule in kicking over a fire hydrant."--From an Assistant to Solicitor's Report.

Lincoln Leads in Uses: In 1920 there were 6,855 special use permits in force in the District of which the Arizona forests had a majority by 1,919 permits. Contrary to all theory, the Coconino, chief bagger of top figures in all lines, steps aside and gives the Lincoln first place with 725 permits. Presumably the Coconino will correct this shortcoming by immediately putting on a special use January cut-price sale.

TNT Stands Rough Trip: "Former Forest Ranger Sherman B. Moore was a visitor in the office this morning, coming in from Grand Canyon where he is still guiding tourists on the Bright Angel Trail. He gave an interesting account of a recent accident on the trail, three of the horses used by the Park Service for packing supplies for the new suspension bridge going off the rim near the top of the trail. One horse was packed with 150 pounds of TNT but this did not explode. No human lives were lost. Two of the horses ended the trip directly on the trail, one at the 500 ft. level and the other at the 900 ft. level. One animal crossed the trail six times on his downward journey, and it was exceptionally fortunate that there were no trail parties in that vicinity at that time."--Tusayan News Letter.

Unfavorable Decision: Mr. Jones announced that word has been received from the Lincoln that the Weems assault case against Ranger Felts has resulted unfavorably to the Forest Service. The jury returned a verdict in favor of Weems who was the defendant in the case. The assault was an attempt at gun play by Weems when Ranger Felts took a search warrant to the latter's cabin in connection with a game trespass case. The indifference of local residents to game law violations is ascribed as the cause of losing the case. It is very likely that the affair is not closed and that Weems will be taken to Federal Court as a result of the affray.

This Helps--But We Need More: "The storm in the early part of the week was a very welcome one to this part of the country. Good rains were reported at Ash Fork and Cedar Glade. The amount of precipitation at Williams was 1.30 inches."--Tusayan News Letter.

Our Alaska Brethern would call 1.30 inches a light fog--a heavy dew, perhaps. But not we.

Seedlings and Frost Heaving: A seedling does not yield up its young life without a struggle. When the enemy frost closes in on the slender stem of a Western yellow pine there at once begins a test of strength between two forces--the expanding, heaving, frozen soil which is the ally of the frost, and the inherent desire of the fibers in the roots to stay together. At Fort Valley they have measured the gameness of the seedling and found that it does not yield until the frost heave registers a lift of four pounds on the stem.

Desert Sheepmen Face Losses: The conference last week at Phoenix between stockmen and the District Forester and Mr. Kerr and Supervisor Goddard and Swift over the question of granting an emergency use of the South ends of the Tonto and Crook to hard pressed sheep bands, resulted in withdrawing the bulk of the requests for range by sheepmen. As far as feed is available and credit can be obtained, sheepmen plan to resort to feeding for the time being. The cattlemen on the Forest ranges concerned claimed that they were about as hard pressed for feed as the desert sheepmen and that throwing in sheep on their already depleted range would mean a loss to both. There is no question about the desert--it is in bad shape. With lambing time approaching, some 50,000 sheep are facing a critical period when heavy losses may be expected. Conditions on sheep ranges north of Phoenix are fair.

Sign Shop Progress: A recent visitor to Santa Fe reports that the Sign Shop is turning out better signs than ever before. Exactly the right color and exactly the right style of lettering have been evolved through three years of experiment. In addition all signs are now being varnished with spar varnish to protect them from fading and chipping. Ranger Blodgett is in charge of the Sign Shop.

They "Pinch" 'em: Due to the prevailing climate and the well-known legal restrictions, Arizona is so desiccated and its inhabitants so dry, that Forest Rangers in that state roll their cigarettes, it is solemnly affirmed, without the customary final wetting that is given by their New Mexico brethren.

Sign Languages to Go: There will shortly be issued by this office a vocabulary of "Spanish terms for Forest Rangers" prepared by Supervisor Shepard in consultation with experts. The book will contain several hundred words and phrases dealing with grazing, ear-marks, brands, timber sales, surveying, topography, fish and game, lands and general forest administration. These terms usually can not be found in dictionaries. Each Supervisor is requested to submit by February 1 a requisition for whatever number may be needed on his forest. Any forest officer who uses Spanish or who is interested in learning it may have a copy on application.

The N. M. Game Commission Bill: At a recent conference between Governor Mechem and about 20 delegates of the New Mexico Game Protective Association, a compromise bill was agreed on as a substitute for the game commission bill prepared by the G.P.A. The only change in the compromise bill over the old bill is in the provision that the Governor shall be ex-officio a member of the commission, or may, if he chooses, appoint a substitute for himself. The Commission will still be bi-partisan, will hire and fire the Game Warden, and will have broad regulatory powers in the way of creating game refuges, closing seasons, etc.

The judiciary committee of the Senate and House held a joint hearing on the bill at which the G.P.A. was represented by Mr. Charles Springer; and the committee was very favorable to the bill. All the people with "inside" information anticipate the passage of the bill in its present form as an administration measure.

District 4 - Intermountain District

Campbell Enters the Lists: Supervisor Campbell, of the Boise, contributed an excellent full page illustrated article on the attractions of the Boise Forest to a recent issue of the Sunday Capitol News, Boise. It looks like a safe bet that the Intermountain newspapers are going to carry much more Forest Service material during 1921 than ever before. Let's all help the work along.

Another Record Shattered: On January 6 we received 200 grazing applications and 19 cases of transfer of grazing preferences. At that time we thought this was a record; however, on the 13th we received 400 grazing applications in one mail and approximately 20 grazing transfer cases.

Paper Wasted: We recently returned 330 bulletins which we figured had absolutely no bearing on Forest Service work. They included the following:

1. Peanut Growing for Profit.
2. How Insects Affect the Rice Crop.
3. The Bean Lady-Bird and Its Control.
4. The Woolly White Fly in Florida Citrus Groves.
5. The Red Spider on Cotton.
6. Control of the Argentine Ant in Orange Groves.
7. How to Control Bill Bugs.
8. Ginseng Diseases and Their Control.
9. Chiggers.
10. Harlequin Cabbage Bug.
11. Lespedeza as a Forage Crop.

It looks as though this was a good opportunity for Uncle Sam to conserve paper pulp.--Wasatch News Letter.

Carrier Pigeons: The "wireless" has been tried at considerable expense and without success. The wire lines in the rougher timbered sections, for various insurmountable reasons, are more or less indispensable at times of emergencies. The Heliograph works only in fair weather. The patrolman's mode of carrying messages is slow, laborious, and expensive, especially in such sections as the Thunder Mountain area. The aeroplane is yet for the future in this section. Why not the Homing or "Carrier" pigeon? A strain of "Homers" from some inherent strain of "carriers" must of a certainty prove a success and while I am not sufficiently informed at present to quote prices certainly the initial cost and the upkeep of the "winged messenger service" for each yearlong headquarters would not equal the cost and upkeep of one four-legged steed, to say nothing of the rider. One's own reasoning can tell them how these birds can be used both for fire and other emergency cases. They could be released at the fire and in a few moments would be at either the Ranger's or the Supervisor's headquarters with their life or money saving message. An electric alarm switch, connected with the trap gate of the cote would announce the arrival of the messenger at all times and would not interfere with the regular routine of the office.

Do not overlook the emergency food possibilities of the proposition for squabs are always welcome on the bill of fare.--Estep--Idaho.

A Chance for Clerks: The following is an extract from a Budapest Newspaper:

"The police in clearing streets of beggars have arrested Dr. Stephen Balkanyi, a clerk in one of the government departments, who masqueraded as a beggar every evening and taking his stand at a crowded street corner, asked for an alms. When searched 30,000 crowns were found in his clothing, the result of three days' begging.

"The only circumstance which he quoted to his defense was: 'I am cursed with an extraordinary good digestion and as my government salary proved too small for my big appetite, I was obliged to turn to a more lucrative profession.'"

Grazing Inspector Rachford, of the Washington office, recently spent a half day in the District office on his way to Sacramento, discussing grazing matters, particularly range appraisal. He expects to return to Ogden early next week.

Grazing Trespass Case: In the United States District Court for the District of Utah, Judge Gery presiding, last evening the case of the United States versus Orange Olsen came on to be heard. District Attorney C. N. Woods acted in behalf of the Government and Mr. E. S. French was the Council for the Defense. This was a suit brought by the United States to recover civil damages from Mr. Olsen for three separate and distinct grazing trespasses upon the Manti National Forest. Court Clerk Schoeller experienced a great deal of difficulty in getting a jury together comprised of members all residing in the State, being of age (refers to ladies), and of unbiased opinion. The case lasted almost four hours. The verdict brought in by the jury was damages in the sum of $177.78, about half of the actual damages demanded by the Government, and no punitive damages were imposed.

Sanitation: It is incumbent on all Forest officers to endeavor to make their Ranger Stations models after which the Forest users and local residents can follow. This is particularly true regarding sanitation. Practically none of the stations in the District can be connected with a sewer system and in an effort to meet the situation, different methods or systems have been developed in different localities.

The Wasatch has installed Kaustine tanks in Cottonwood Canyon where summer resorts and numerous campers threaten the water supply of Salt Lake City. The Bridger has been using septic tanks at several Ranger Stations. The Weiser and Caribou have tried indoor chemical closets. Cesspools have been constructed by settlers if not by the Service. Some stations have been provided with well-built fly-proof toilets with earth pits or cement receptacles. Others still have a dilapidated, unsanitary, fly-breeding shelter, which is an eye-sore to Forest officers and a disgrace to the Service.

District 6 - North Pacific District

Wild Life of the Old West: The following extracts from the "History of the Ochoco National Forest" prepared by Mr. Allen H. Hodgson might be of interest after reading "Adventures of Zenas Leonard" in the Bulletin of Jan. 3. Verily, we have helped make the Forests safe for the sheep herders!

"Sheep Shooters' Headquarters, Crook County, Oregon. December 29, 1904: Editor Oregonian: I am authorized by the association (The Inland Sheep Shooters) to notify the Oregonian to desist from publishing matter derogatory to the reputation of sheep-shooters in eastern Oregon. We claim to have the banner county of Oregon on the progressive lines of sheep shooting, and it is my pleasure to inform you that we have a little government of our own in Crook County, and we would thank the Oregonian and the Governor to attend strictly to their business and not meddle with the settlement of the range question in our province.

"We are the direct and effective means of controlling the range in our jurisdiction. If we want more range we simply fence it in and live up to the maxim of the golden rule that possession represents nine points of the law. If fencing is too expensive for the protection of the range, dead lines are most effective substitutes and readily manufactured. When sheepmen fail to observe these peaceable obstructions we delegate a committee to notify offenders, sometimes by putting notices on tent or cabin and sometimes by publication in one of the leading newspapers of the county as follows:

"You are hereby notified to move this camp within twenty-four hours or take the consequences.

Signed: Committee.

"These mild and peaceful means are usually effective, but in cases where they are not our executive committee takes the matter in hand, and being men of high ideals as well as good shots by moonlight, they promptly enforce the edicts of the association.*********Our annual report shows that we have slaughtered between 8,000 and 10,000 head during the last shooting season and we expect to increase this respectable showing during the next season providing the sheep hold out and the Governor and Oregonian observe the customary laws of neutrality.******In some instances the woolgrowers of eastern Oregon have been so unwise as to offer rewards for the arrest and conviction of sheep shooters and for assaults on herders. We have heretofore warned them by publication of the danger of such action, as it might have to result in our organization having to proceed on the lines that 'Dead men tell no tales.' This is not to be considered as a threat to commit murder, as we do not justify such a thing except where flock owners resort to unjustifiable means in protecting their property.

(Signed) "'Corresponding Secretary, Crook County's Sheep-Shooting Association of eastern Oregon'".

District 7 - Eastern District

Rocky Bayou Bridge: Nine bids, ranging from $8,250 to $16,000, were received by the Supervisor of the Florida National Forest for the Rocky Bayou bridge. The job calls for a 1,000-foot structure, requiring about 4,260 linear feet of piling; 70,000 B. F. of lumber (National Forest stumpage furnished); 6,200 lbs. of hardware; 1,000 yds. of common excavation, and 300 yds. of sand-clay surfacing on approaches. Work will start within 30 days, and the cost paid on a 50-50 basis by the county and Forest Service.

Wanted--A Job: Dear Sir: Will you please send me some literature in regard to forest ranger work?

I am 18 years of age and have been raised on a farm, have also done a little cow work. I was on the biggest ranch in Texas.

Well if this work requires any education I am not fit for the job.

If you think you could handle me I might take a job in the fall.

Will you please let me know what kind of wages are paid for that work.

Sincerely yours,

____________.

A. D. 2221 - What?

By Smith Riley

In three hundred years from now what will your Forest record be? Will it consist of a compilation of interesting facts and observations on the inhabitants, resources, wild life, etc., of 1921, or simply a lot of yellow, musty grazing records, timber sale contracts and paid vouchers?

In this connection, an old sketch of the natural history of the District of Columbia has recently come to my attention, and is here quoted in part for the information of field men.

From the proximity of Virginia, one of the first settled regions of the United States, the land from which the District of Columbia was formed, would be expected to have received some attention from early explorers. Not only was this part of the country explored, but, fortunately, observations were made upon certain features of the natural history. Romantic expectation is further satisfied by the fact that none other than the redoubtable Captain John Smith made and recorded the first data on the fauna of this neighborhood.

We read in "The Third Book of the Preceedings and Accidents of the English Colony of Virginia" that "on the 16 of June, 1608, we fell with the River Patowomch******. Having gone so high as we could with the bote we met divrs Saluges in canowes, well loaded with flesh of Beares, Deere, and other beasts, whereof we had part." Necessarily, these "Beares and Deere" came from no great distance, and must be regarded as part of the District fauna of 300 years ago.

In the narrative of the return voyage, Captain Smith mentions "a few Beuers, Otters, Beares, Martins and Minks we found." Thus bears were recorded along the Patomac both above and below the present site of Washington, and there is no doubt that they once roamed over all the territory now included in the District.

Larger game is mentioned by the next contributor to the natural history of the District, an account of whose experiences is quoted from Wm. T. Hornaday. The earliest history of the bison in eastern North America, or anywheres north of Coronado's route, was made somewhere near Washington, D. C., in 1612 by an English navigator named Samwell Argoll, and is narrated as follows:

"As soon as I had unladened this corne, I set my men to the felling of Timber, for building of a Frigat which I had left half finished at Point Comfort, the 19 of March; and myself with the ship (went) into Pembrook (Potomac) River, and so discovered the head of it, which is 65 leagues into the land and navigable for any ship. And then marching into the country I found great store of cattle as big as Kine of which the Indians that were my guides killed a couple which were found to be very good and wholesome meate, and are very easie to be killed, in regard they are heavy, slow, and not so wild as other beasts of the wilderness."

*****

Ranger Bill Says

"Allotment conferences is like horse tradin'--each feller wants to get the best of the deal."

"I'm figerin' on a hired man and a nurse for the Kids if study courses keep growin' in poplarity."

"Efficiency is a grand word if you can get it off o' paper - and to orkin'."

SERVICE BULLETIN

U. S. Forest Service

Washington, D. C. - February 21, 1921.

(Not for Publication)

CYCLONE MAKES FOREST GIGANTIC FIRE TRAP

The greatest fire trap known in the history of the United States resulted from the cyclone which swept the forests of the Olympic Peninsula in the State of Washington on January 29, according to telegraphic reports received from District Forester Geo. H. Cecil at Portland, Oregon.

A tremendous tornado blew down timber estimated at five to eight billion board feet, in a strip 75 miles long and 30 miles wide; one billion board feet of which is within the Olympic National Forest. If the loss is as great as announced, and latest reports tend to increase rather than to diminish the extent of the catastrophe; this is the greatest disaster ever recorded in the annals of forestry or lumbering.

A wind velocity of 132 miles per hour was recorded at the North Head Station of the Weather Bureau, near the mouth of the Columbia River, which was partly destroyed by the storm. The observer at this station estimates that after his instruments were wrecked the wind increased in strength to 150 miles per hour. The highest wind velocity ever recorded previous to this date on the Pacific Coast, was 144 miles per hour at the Port Mendocino Station in California in 1886.

The windthrown timber, which reports state lies in a tangled mass over an area of 2,250 square miles, is largely western hemlock and spruce, both of which are subject to rapid decay. Transportation is lacking for much of this region, and it is doubtful if any considerable proportion of the timber can be salvaged unless prompt action is taken. The stand was exceedingly heavy. Where the full force of the wind was felt practically every tree was thrown down, and all roads, trails, and telephone lines were completely obliterated. Much of this destruction is on land owned by private individuals and large timber companies.

Field officers report that, as far as is known, no one was killed by the storm, although there were many narrow escapes. A large number of buildings were destroyed and some cattle killed. It is believed that many of the elk which inhabit this region were killed, or if not killed are hemmed in by the down timber and debris and will slowly starve. The storm zone reached entirely through the best winter feeding grounds of these animals.

If fire should ever gain headway in this devastated area, the most stupendous conflagration ever known in this country would result. The topography is very broken and the blow-downs are in part at least known to be "spotty," with much fine timber uninjured. Fire would not only destroy all these islands of timber but would seriously endanger a vast surrounding stand. Fifteen billion feet is exposed in the adjoining part of the Olympic Forest, besides large amounts on State and private lands. The destruction would be likely to exceed even that of 1910, the most appalling fire season ever encountered by the Forest Service, when over four million acres of National Forest land were burned over in the west, and 6½ billion board feet of timber, valued at nearly 15 million dollars, was lost.

To meet this emergency situation, Secretary of Agriculture Meredith has requested the Secretary of the Navy to detail hydroplanes for an air survey of the storm-swept region in order that the amount of damage may be determined, since it is impossible to traverse the uprooted forests on the ground. A request has also been made to the Secretary of War that the railroad constructed by the Spruce Production Corporation, extending from Port Angeles to Lake Pleasant on the Olympic Peninsula, be equipped with rolling stock and operated at its maximum capacity. This railroad is the one important line of communication into the devastated area, and will afford a means of salvaging a considerable amount of the down timber.

The Secretary of Agriculture has transmitted to the Secretary of the Treasury an estimate to be submitted to Congress for an emergency appropriation of $100,000 to enable the Department to employ patrolmen to guard the storm area against fire, to repair and construct roads, trails, telephone lines and other means of communication, and to salvage Government timber. Governor Louis F. Hart of Washington, it is reported, will also ask the State Legislature for an emergency appropriation of $100,000 to open up the country and cooperate with private owners and the Federal Government in intensive fire protection.

School Days Are Never Over

By Roy Headley

"Everything waits on education," says Commissioner of Education P. P. Claxton, "health, progress, social purity, individual development, wealth." If he had been talking to Forest officers, Mr. Claxton might have added, progress in National Forest management to his list.

But education does not consist of formal instruction in schools and colleges only. That is desirable--almost indispensable, in fact, but it is only part of education. Go to any man of 50 who has kept his mind and life in a condition of growth and ask him about his education. He will tell you that by far the greater part has come after the end of his school days. With him every year has been a school year, whether spent under formal instruction or in the great university of active life, where facts and new ideas are always ready to crowd to the limit the individual's capacity to learn.

What does education mean to the Forest officer who has left behind him his school days, and whose time is filled with the absorbing interests of his work, and family and civic duty? Must he get books and hold himself to a hard grind on whatever subject he feels himself called to master? Without a doubt that course means education and growth and increased power to him, but that is not the only means of education open to such a man. Given an inquiring and receptive attitude of mind, and a lively interest in things around him, he will find many and varied sources of education, provided he is able to bring himself under the stimulus that we all need.

Not the least among the possible sources of education for Forest officers is the Bulletin, For the average man it is the only means of finding out what is being thought and done by men outside his own group. The Bulletin has possibilities which are not always realized. Suppose that within five years we are able to put over the realization of a weekly magazine well gotten up, attractively illustrated, and printed under some name that will indicate a publication dealing not merely with the restricted field to which professional forestry chooses to confine itself, but to all the work of the men who are engaged in that branch of public service which seeks to make the public land on the National Forests most useful. Suppose that this magazine is managed by an ex-Forest officer who has so developed his aptitude for such work that he is able to take his place among the best of the magazine editors of the country. Suppose that it has become the custom for every man from Forester to District Ranger to go to this magazine with any new facts of National Forest experience, or any criticism or suggestion or new idea which he has formulated clearly enough to enable him to put it in interesting form for readers.

Can you think of anything which would mean more in general education and added interest for the Forest officer?

There is nothing about such a picture that is impossible or even extremely difficult. The quality and range of contributions to the Bulletin are steadily improving, and increasing numbers of men are thinking it worth while to put their ideas in shape for publication. There is every reason to expect the range and quality and quantity of contributions to the Bulletin to rise even more rapidly than heretofore. It is only a matter of time until the Bulletin will hold a place in the lives and work of all of us important enough to warrant our taking steps to organize a real, live National Forest magazine, on an independent subscription basis, to occupy the same vital relation to the Forest Service that the Army and Navy journals occupy with our soldiers and sailors.

A Critic Gets His

The New York Evening Post of January 29 carried an illustrated article by Walter Sheppard of Jackson Hole, Wyoming, in which the rapid destruction of the Yellowstone elk herds was directly laid at the door of the Forest Service and other Government Bureaus. In the Post of February 5 answers to this article were made by Col. Greeley, and Dr. Nelson, Chief of the Biological Survey. There also appeared in this same issue another article on the elk situation by Emerson Hough in which was a scurrilous attack on the Forest Service and its officers. The following letter to the Editor of the Evening Post by former Forester H. S. Graves was written in answer to Mr. Hough:

"In your issue of Saturday, February 5, you published a contribution from Mr. Emerson Hough regarding the Yellowstone elk situation containing implications so grossly unjust to the Forest Service that they should not be permitted to stand unchallenged.

"Mr. Hough bolsters up his position by imputing motives. With the main issues involved I shall not now concern myself. Mr. Hough has a right to form and express his own opinions about them. But against his atrocious impeachment of the whole-souled loyalty and devotion with which the men in the Forest Service serve the public interest, often at large pecuniary sacrifice, I register most emphatic protest.

"'Friends of the wild game of America,' says Mr. Hough, 'get no pay. All they make is the enmity of men on Government payrolls who have jobs to defend and records to explain. There are some other men who have no jobs to defend, but only a country to defend the best they know how.'

"Will Mr. Hough say that he has received no pay for his articles regarding the elk which have been published in the various magazines at different times? And by what right does he arrogate to himself and those who agree with him a monopoly of patriotism?

"'The spreading of the truth,' he says, 'is the only thing which really can help the remnants of the Yellowstone Park herd.' True. Is he then rendering them a service, or the contrary, when he adds such a sentence as this?

"'It is a grievous situation when any citizen comes to feel that he and his country have been betrayed by that country's own friends, robbed by its own servants, and sold out by its own hired men.'

"These are 'wild and whirling words.' No man has a right to use them causelessly without rebuke. Abuse of public officials is as cheap as it is censurable; for those unjustifiably assailed are not in position to reply without restraint, while the effect is to impair their usefulness by undermining the confidence of the public in them.

"I have no job to defend, and can speak certainly with an authority equal to Mr. Hough's as to the spirit in which the men of the Forest Service work. As their chief for ten years, I am able to say with some confidence that they are as far from being job holders as it is possible to conceive. They are doing a work of immense difficulty, for far less pay than they are worth and could get if they chose to seek it, in a spirit of loyalty and with ideals of public service which I believe can nowhere be surpassed. Neither Mr. Hough nor Mr. Sheppard could go before western audiences, where the work of the Forest Service is better known than in the East, and say the things they have said in the columns of the New York Evening Post without calling forth resentful challenge."

What Is A Bramalo?

By C. R. Tillotson, Washington

No, it is not a new fire-finding instrument, silvicultural system, type of logging equipment, or insect or plant pest to worry about. Ask Supervisor Frank Rush of the Wichita Forest, and maybe he will let you see it. You all know that Rush has a fine herd of buffalo on the Wichita. Possibly you did not know that he also has a Brahma cow. She is not quite so easy to see as the buffalo, except through a spyglass, for she is as wild as the herd of elk. She is, however, the mother of the Bramalo calf, and one of the buffaloes is its father. Now you know what the Bramalo is, the only one in existence. It is now six months old and weighs between 500 and 600 pounds. It is sturdy like its father and tends to be wild like its mother. Its hair is beautifully fine and glossy. Some day Rush hopes to have his ranch stocked with Bramalos, then he expects to develop a choice trade in sirloin steaks. The Bramalo is built to cut out more sirloin than our native stock. Then Rush is going to develop a special breed of running horses so that he can head them off in the round-up.

Planting Investigations at Savenac Nursery

By W. G. Wahlenburg

The old methods of learning by chance--of working by guess and "by golley"--are a thing of the past. The modern way is the scientific way. Research is the foundation of all real and lasting progress. If you don't believe in research, you don't believe in progress.

The Priest River Experiment Station handles general silvicultural studies for District 1. These include the processes of natural reforestation. Savenac Nursery is attacking the problems concerned with artificial reforestation.

These latter problems fall naturally into three main groups, (1) forest tree seed, (2) nursery practice, and (3) field planting and seeding.

Methods of planting, seed collection, and nursery practice have developed rapidly in the last few years--until they now may be considered somewhat standardized. At least it may be said that, for improvement in results of reforestation, we must look less to improvements in administrative methods and tools, and more to the increasing of our knowledge concerning the requirements of trees for successful artificial reforestation.

Normal progress in investigative work is naturally and necessarily a long time proposition, and insufficient funds for the work delay progress still further. Nevertheless, a good start has already been made. Take, for example, weeding operations in nursery seedbeds. These require the expenditure of hundreds of dollars in labor costs annually. Investigation shows that we may expect to save this trouble and expense through the perfection of a means of chemical weed eradication. Two seasons of observation indicate that treatment with eight grams of zinc sulphate per square foot of seedbed prevents most all of the weed growth for two seasons thereafter, tends to stimulate first year germination of western white and western yellow pine, and does so without appreciable injury to the stock. Application on a commercial scale awaits the determination next season of the effect of the chemical on green fertilizer crops. Complete results of the study are expected in 1926.

For many years western white pine has been the major species produced for planting in this District, and it was always planted in the spring. For some unknown reason this practice never resulted in satisfactory germination. Many of the seeds held over until the following season. This delayed field planting for one year and produced a stand hard to handle because of the mixture of two age classes. Nurserymen, in other districts as well as our own, had this problem to contend with and failed to solve it. For Savenac Nursery, research has clearly shown that sowing of this species should be done during the first half of September. Results are that one year's time is saved, a satisfactory stand is secured, and shading and mulching can now be dispensed with entirely. These latter processes were formerly necessary to protect from sun and frost the tender seedlings resulting from late germination.

In regard to the next main step in artificial reforestation, field seeding and planting, many things have been brought to light, and we are constantly adding to our knowledge of such problems as direct seeding, classes of stock, suitable sites for planting, and season of planting.

In administrative work one gets theories and "hunches" but careful experiments are indispensable in order to determine the facts. Of course at times our efforts do not lead us as far as we expected or they prove the opposite of the things we hoped were the facts, but this is inevitable. When a carefully controlled experiment leads to no results which can be applied, what good is it? If it shows us that we can not hope to solve the problem just that way, it is worth while.

In a broader sense, the following things are necessary for the success of research--adequate funds for the work, correlation of all allied kinds of research, carefully drafted plans for investigative projects, intelligent execution of these plans, conservative interpretation of results, and definite provision for bringing the findings into actual practice wherever they can be applied.

Much of our forestry information is empirical. This is necessarily so, especially wherever forestry is in its early stages. The practice of forestry as an art will continue on such a basis, but as economic conditions are demanding more intensive development of woodlands, forestry must be based on scientific knowledge. Good forestry will be no less an art, but it must become a science as well. We are pioneers in the work and the challenge is ours to bring forestry up to the standard it deserves and demands.

THE ROAD WHERE RIVERS RUN

By Roland Goodchild

There are no roads I love so well
    As those that run where rivers are,
I love to hear the waters tell
    Of strange and distant lands.
They sing me songs of countries far,
    Of mountain pines and desert sands.

Full wondrous songs they sing to me
    Of North, or South, or East, or West,
As they meander to the sea,
    Where all the rivers meet;
They fill my heart with wild unrest
    And guide my eager, wandering feet.

I love the roads where rivers run,
    Because they whisper tales to me,
And when my lonely trail is done,
    Beside them let me sleep,
Lull'd by the murmur of the sea,
    The music of the wondrous deep.

How to Make Fire Losses Less

By H. B. Rankin--Crater

(Inspector Evan W. Kelley's report on the Crater National Forest shows rather noteworthy results in fire protection on the Forest beginning about the time (1918) Supervisor H. B. Rankin took charge. The record is as follows:

Year	Forest Officer's Labor on Fires	F. F. Expenditures	Acres burned	Damage	No. of fires
1917	$ 838	$43,439	15,982	$12703	175
1918	1232	18,789	31,437	27707	87
1919	2150	4,398	2,421	2353	118
1920	462	5,531	1,721	1506	43

There are a number of interesting things about this record. Damage was higher in 1918 than in 1917, but the sum of damage and FF was less in 1918 than in 1917. The fire control force was 43 men less in 1918 than in 1917. Note how the value of Forest officer's time on fires goes up for 1918 and 1919, coincident with the sharp drops in FF expenditures. The large area and heavy damage in 1918 may be credited to the fact that Rankin refused that year to hire certain local labor that he distrusted. The uniform improvement in the record up to the present looks like a vindication of his theory.

There were a number of faults in the Crater record, but on the whole the statistical showing was so good that we asked Rankin to tell the Bulletin readers how he did it. His answer follows.--R.H.)

"All fire-fighting plans are talked over thoroughly between the Supervisor and the Rangers and between the Rangers and the Guards. Whenever possible, the Rangers' instructions are checked by the Supervisor and a general get-together conference is held by the entire force.

"Our first important point is to reduce the get away time to the fire to the minimum, and we have reached a great improvement along this line.

"Every Ranger is picked for his honesty, good judgment and staying ability. There can be no arguments--the force must make good or "get out', and the Supervisor must travel pretty steadily to make sure that no one is falling down. Every man on this Forest understands that his fire-fighting success is an absolute necessity if he expects to keep his position. In the same way, the Rangers realize that they must pick their Guards for honesty, stability, principles, and strength of character. Honesty and stability are absolutely essential and must never be missing. No Guard is ever hired by the Supervisor without first consulting the Ranger under whom he is to work. Each Guard is placed in accordance with the plans agreed to by the Supervisor and Ranger, which have been worked out in personal conferences.

"Each Ranger is a Fire Chief, and goes to all fires when he believes it necessary.

"Every member of the force is agreed that all fires must be put out without waiting for them to burn to natural barriers.

"The Supervisor's office is the clearing house for the whole Forest. During the peak of the fire season we know where almost every man is and what he is doing each day.

"The Ranger is notified of every fire in his district as soon after it starts as possible. If for any reason he or his helpers can not be communicated with, we take no chances, and either have some one from another district or some one from this office go to the fire at once. For the past two years no one has fallen down in his duty to go to a fire.

"A fire, having been reported to the Supervisor's office, is kept tab of by frequent reports from the nearest lookout.

"We are always careful, in picking a fire-fighting crew, to get men who are all thoroughly trustworthy. We would much rather have one absolutely dependable man than ten men about whom we know nothing.

"The arrests in 1919 of parties responsible for the starting of fires helped materially in reducing the numbers of such fires this year. Another thing which helped us was the conferences with stockmen, during which we advised them that, should we be able to prove them guilty of causing fires, they would surely lose their grazing rights."

Ranger Bill Says:

"A lot of people who talk about gettin' a 'Square deal' from the Government seem to forget it works both ways."

"I can't help but think of Geo. Washington every time I make out an expense account."

"I calculate the Service won't be back to normal 'till the fellers can spend five minutes together without mentionin' salaries."

"The Deputy Super. who recently requisitioned a pair of skis has finished his second bottle of liniment."

Vision in Photography

By E. S. Shipp--Washington

Pictures were used to express thought and record events long before it was possible to do so by means of alphabetic writing. The grotesque pictures of ancient man have furnished us with a sketchy record of his advance toward civilization. When a phonetic alphabet had been established man began to write history, still using pictures to make himself more intelligible just as we do to-day.

Crude pictures lacking in perspective and proportion failed to satisfy. As man became more intelligent, he set about to improve the methods of graphic representation. His long and determined search for a literal method of representing objects and scenes resulted in the discovery of photography. Photography enters so largely into our daily lives that we scarcely realize its necessity and importance. Still it is necessary to every line of human endeavor because it has the capacity to actually visualize man's achievements and preserve them for future study and consideration.

Aside from its usefulness as a means of record it has an educational value as well because it makes a direct appeal to our most educative sense,--Vision. We are more likely to be impressed by the things which we see than with those we are told of or read about. A knowledge of photography teaches us to be close observers, to pay attention to details and take into account factors ordinarily unobserved. Therein lies its possible value to men in the Forest Service. Might not a Ranger become a better officer if his serious interest in photography had taught him to look seeingly at things?

Modern photography is a simple and easily learned process once we grasp its limitations as well as its possibilities. When the beginner finds a method to determine correct exposure most of his difficulties will have disappeared. This may be accomplished by the intelligent use of an exposure meter, or from data gathered from his own experiments. A knowledge of the rules of composition may not be necessary to successful pictures, still some attention should be given to the arrangement of the subject within the boundaries of our pictures. We should consider how best we can place our subject so it will be dominant and hold the attention of the beholder. This is never done by placing the subject in the shadow but by bringing it out into the light.

The study of good pictures, and the reading of photographic literature by those competent to impart their knowledge will greatly aid the beginner who really desires to improve his work. He should learn, however, to read and digest only that which will aid him. As a beginner I once had a cookbook in which the donor had inscribed "Reading maketh a full man." It did, but the results were not always satisfactory. Our Forest Service collection of photographs not only should serve our present needs, but it should serve as a pictorial record of the accomplishments and advancement of American forestry. Let us make it still more valuable by improving the quality of our work.

Grazing and Fire Control

It is the unanimous opinion of the District Six Investigating Committee that properly regulated grazing is a large, if not the largest, single controllable factor which is operating to reduce the fire hazard.

Comparison between the ungrazed area in the Fort Rock Ranger District on the Deschutes and the contiguous grazed Silver Lake Ranger District on the Fremont is striking. On the former area the estimated fire damage and suppression costs for the last seven years total over a third of a million dollars, while on the latter it is estimated to be less than $4,000 for the same period. Timber cover, topography and climate are very similar on the two areas, but the Fort Rock District is unwatered, hence ungrazed. Here water development for range stock is the answer.

The Committee feels that there are a great many other areas of grazing land in the District, most of them relatively small, which are ungrazed or lightly grazed, and on which fire hazard could be very materially reduced by grazing. Even in approximately fully grazed areas there are patches where because of inaccessibility, lack of water, lack of salting, insufficient administration, or other cause grazing use is incomplete or lacking.

It is therefore the urgent recommendation of this Committee that the offices of Grazing and Operation cooperate actively and aggressively in extending grazing use as widely as possible, not simply with the idea of increasing carrying capacity, but for the specific purpose of reducing fire hazard. This may be accomplished mainly by increased administration in the field, and also by developing water, by opening up inaccessible areas, etc.

Also, it is recommended that where because of inaccessibility no grazing is possible under existing regulations, that consideration be given to the advisability of granting free grazing use of such areas for a period of years sufficient to justify users in opening them up; also since the Douglas fir region west of the Cascades includes the largest ungrazed areas in the District with high fire hazards, it is suggested that special consideration be given to the early expansion of grazing to this region.

M. L. Merrett
J. L. Peterson
Robert H. Weidman
Sub-Committee.

New Legislation in Congress

On Again! Off Again! The bonus is on deck again, having been reinserted in the Legislative, Executive and Judicial Bill by the Senate.

Later: On February 11 the bonus was again stricken from the bill in the Senate on a point of order.

Still Later: By an actual vote the Senate reinstated the bonus in the bill on February 14. The measure is now up to the tender mercies of the conferees of both the House and Senate.

Fire Fighting: Senate amendment to the Sundry Civil Bill appropriated $25,000 for fighting forest firez in National Parks, but provides that none of the funds shall be used for "precautionary fire protection or patrol work prior to actual occurrence of the fire."

Washington Notes

Col. Greeley addressed the Massachusetts and New Hampshire Legislatures on the National Forestry Program on February 17 and 18. On February 23 he goes to Chicago to address the Association of Commerce, and will speak that same evening before the City Club of Milwaukee.

Assistant Foresters Headley and Barnes entertained the Forest Service "home folks" with lantern slide lectures on the "Life and Duties of a Forest Supervisor and Ranger," at the monthly meeting held February 16.

Forest Regions Map: A map has been compiled in Drafting that will be of interest to the Service. Its title is "Forest Regions of the World and the Geographical Distribution of Important Timber Trees," and it is based on a map prepared by J. Hudson Davies F.R.H.S., an English authority. Its size is about 20" x 30" and the following information is shown: Tundra and Snow-covered Regions, Desert Grass, Grassland and Prairie, Well-wooded Regions (20 to 40 per cent of land surface), Densely-wooded (upwards of 40 per cent), and Approximate Location of Important Timber Species.

A tracing of this map has been made so that copies could be struck off and used for wall purposes, as it is considered the best map of World forest conditions available. The map as it now stands represents the most reliable study of the subject that has been prepared. A white print of this tracing, mounted on a stiff board, colored in accordance with the legend, would be of real value to every office in the Service. Drafting would be pleased to prepare copies from time to time as the regular work of the office would permit.--J. M. Witherow.

District 1 - Northern District

District vs. Service Bulletin: Extracts from letter to Assistant Forester Headley from District Forester Fred Morrell:

I agree in your analysis of the D-2 Bulletin with one exception. I don't think it is true that it does not call for hard thinking from anyone. Some of the articles written by the Rangers are their best thought. They do not of course conform favorably as a product with those written by men of broader training and greater ability, but I think the men think to the best of their ability in producing them.

In considering the two bulletins I have attempted to cast in a crude way what it seems to me should be their purpose or rather to quote what I conceived to be the purpose of the D-2 bulletin and cast that for the Washington office. Here is what I have arrived at, putting the several objectives in one, two, three order.

District 2

1. Cultivation of good fellowship ("A happy family feeling")
2. Furnishing entertainment in form of light drama of the Service work.
3. Education of the force by expression (i.e., by the organized thinking that is necessary to write articles.)
4. Education of the force by reading the production of others.

Washington

1. Education by reading (No. 4 above)
2. Education by expression (No. 3 above)
3. Cultivation of good fellowship. No. 1 above but in a different way somewhat.
4. Furnishing entertainment (No. 2 above)

Now, on the basis of my analysis, the two Bulletins should obviously not be alike. My thought is that it would be a serious mistake to make them so. In their entirety they are for enforcement of esprit de corps, but Washington and the District Offices are not in the same position. Washington should not envy the place of the District Bulletin in the hearts of the men. It can and I think it does fill another place just as much to be proud of. It should have more dignity and more formality, to attempt to be the same as the Dist. Bulletin would take it out of its natural element and it would not succeed in being what the District Bulletin is. It seems to me that a large part of its purpose is as a medium for the Forester and his staff to get over their views and their thoughts, directly to the field men. They have no other way of doing it directly. It can not be done in official correspondence, and there is great need that the field force should see these men - see their personalities in a more direct way than a third or fourth reflection through their superiors. It should serve too for field men who have things worth while to say that should be read outside of the District to which they are assigned. Within their own district they express themselves directly through official correspondence and need not therefore write much serious stuff in the District Bulletin.

Manual Review:

Question: Tools were removed from a fire-tool box. Later District Ranger finds them on a nearby ranch.

(a) What should Ranger do in the first place?

Answer: The Ranger should report to the Supervisor if it can be done peaceably.

S. V. Fullaway, formerly Forest Supervisor of Nezperce National Forest, Idaho, has been promoted to Chief of the Office of Forest Products at Missoula, Montana.

Elers Koch, Assistant District Forester, is attending a conference of field men of District 4 at Ogden, Utah. He will talk on D-1 fire-fighting methods and other related problems.

District 2 - Rocky Mountain District

Some Story! Ranger Reed's mules "have been transferred from the alfalfa field to victims of the literary field," (to use his own words), in a story "Fighting Forest Fires from the Air," by Laurence La Tourette Driggs, in the Outlook of January 26.

"Elijah Williams" of the story is the dean of the Uncompahgre ranger force, Elmer F. Reed. The author occupies a summer home on the Forest near the Cold Springs Ranger Station. Mr. Driggs is a war aviator who has written extensively of western life. It is a good story, even though the silviculture is not correct in each detail.--D.S.Jeffers--Uncompahgre.

(We have enjoyed reading about the "birch and maple" forests of Colorado, but fear that Fire Inspector McLaren would never approve of the "liquid chemical containers of glass" used in putting out the forest fire--they might not pack well on a mule.--Ed.)

Study Club: About 20 men in the District Office are enrolled in an informal study club, having for its object the investigation of the principles of scientific management and their application to our own organization. Five general topics have been selected as follows: Standards, organization, training executives, cost keeping, and developing initiative. Each of these subjects has been assigned to a group of three or four men and each occupies about three meetings of the study club. Each group subdivides its subject into two or three logical divisions and each individual, after reading the best literature available, presents his subject in the form of a written paper to the entire club. These papers occupy ten or fifteen minutes each and are followed by discussions in which the members attempt to fix more clearly the points brought out and apply the principles as well as may be to the work of the Service.

Rangers' Meeting: On February 4 to 7 inclusive, a meeting of the Rangers of the Rio Grande, San Isabel, Cochetopa, and Durango-San Juan Forests was held in Pueblo. One of the objects in holding the meeting at that point was to secure direct contact with the citizens of Pueblo who have been active in the furtherance of the San Isabel Public Recreation Association so that all the Rangers might learn at first hand something of the work which the San Isabel is doing in recreation and the manner in which it is being received by the people of Pueblo. Supervisors and District Office men were present, but the program was composed entirely of subjects assigned to the Rangers.

The Pueblo Chamber of Commerce tendered a reception to the Rangers and they were banqueted by the San Isabel Public Recreation Association. At these occasions, the liveliest appreciation of the Forest Service and its work was expressed by the hosts. Opportunity was also given the men to inspect the great steel plant of the Colorado Fuel & Iron Company. The meeting closed with a banquet given by the Rangers themselves at which they had as guests some of the Pueblo men who had so kindly entertained them.

Industrial Conference: Assistant District Forester Hatton attended a meeting at Montrose, Colorado, on February 3 to 5, called by live stock associations and the commercial clubs of Montrose for the purpose of getting together all lines of industries on the Western Slope to consider business conditions and work out suggestions and remedies for betterment. The meeting was very well attended and was voted the biggest thing of its kind ever held in the State and it will be made an annual affair. Among the prominent people who attended were Governor Shoup, Ex-Governor Ammons, Senator Elect Nicholson, various farm bureau heads and prominent state officials. All important railroads were also represented.

District 3 - Southwestern District

Fire Fighter May Receive Compensation: Compensation at the rate of $66.67 a month from September 7, 1916, may be granted to Reuben R. Hunter of Deming, N. M., as a result of total loss of sight incurred while voluntarily fighting a forest fire on government lands near Cloudcroft in May 1904. The U. S. Senate on January 25, 1921, passed a bill to this effect and if it should later pass the House, it will bring Hunter under the operations of Compensation Act of September 7, 1916, in the status of an employee.

Federal Civil Service: Beginning with the issue of February 5, the Saturday Evening Post is running a series of four articles on the subject of the Federal civil service. The first article proved quite interesting, especially to one on the inside looking out; but as Edward G. Lowry, the author, states, the articles are written strictly from the unbiased viewpoint of an onlooker from the outside.

The Field of Public Relations is being considerably expanded in this District to include many educational projects and campaigns heretofore handled from the several offices. District Forest Inspector Kircher will, in the immediate future complete this work on fire protection and improvements and has been given full charge of Public Relations activities. In this work he will be assisted by Forest Examiner Ancona.

Legal Note: The Supreme Court of Oregon held in a recent case (194 Pac.165) that evidence of statements made by a herder in charge of trespass sheep was competent to show that the sheep belonged to the defendant in an action for damages.--DL.

New Sort of Cooperation: Forest rangers on the Coronado have been requested by the local officer of the Immigration Service in Tucson, to report all Japs or Chinese suspected of being contrabands from Mexico, seen traveling trails and roads on this side of the border, especially after dark.

Fat Purse on Tonto: "Rangers Sherman and Hall have submitted trespass reports in fourteen cases covering 5,309 head of excess stock on the Mazatzal, Salt River and Sierra Ancha Districts. Each case has a proposition of settlement from the trespasser attached to the report. The sum total involved in these cases is approximately $21,000."--Tonto Bulletin.

Loco Elimination Pays Dividends: "It pays to figure ahead. Last winter when the Colter Brothers were digging out loco weed from their pasture, some remarked that it was money wasted. They spent upwards of $1,000 on this work and as a result, they have sufficient pasture to winter their stock. B. J. Colter reports their loss will be 'nil' this season from this weed, while their loss last year was considerably more than the above figure on cattle alone."--Ranger Haynes--Apache Bulletin.

Ranger Herbariums: "We are at least making progress in the ranger herbariums. Ranger Warnock has been handling this work in the office. The following number of specimens have been gathered by Districts: Big Burros 30; Mogollon 50; Dry Creek 15; Pinos Altos 60; Mimbres 0; Black Range 28; McKinney Park 41. Total 244.--Gila Bulletin.

One of the Nation's Playgrounds:--"The Upper Pecos is the American Tyrol. In summer it is the home of hundreds of vacationers, who either camp out in tents or live in cottages. The U. S. Forest Service is making this part of the Santa Fe National Forest into one of the nation's foremost playgrounds by leasing cottage sites in ideal locations and at nominal rentals."--Santa Fe Railroad Folder.

Ranger Croxen Exonerated in Trial: The preliminary trial of Ranger Fred Croxen of the Coconino in connection with the killing of Charles Quayle, a stockman on the Bly District, resulted in his release from the charges and cancellation of bond. The case was heard before Justice of the Peace Kidd at Flagstaff on February 7. Mr. Cheney represented the District Forester at the trial and the defendant was personally represented by Attorney C. B. Wilson of Flagstaff. About twenty-five witnesses appeared in court and the preponderence of evidence in favor of Croxen resulted in his discharge and the dismissal of the case.

District 4 - Intermountain District

They Run in Flocks on the Challis

On January 3, R. L. Falconbery, who has a ranch on Loon Creek, found a deer which had been killed and partly eaten that morning. He started to follow the tracks and had gone less than 500 yards when he jumped a bunch of six mountain lions. In a few seconds he had lead in five of them, but owing to the character of the place in which he found them, some of them managed to get out of sight pretty quick. He got two at that time and went back the next day and got one of the wounded ones and followed another till the snow got too deep, when he had to give it up. Mr. Falconbery trapped predatory animals for the Forest Service last winter, but this winter we understand the State has a hunter with six dogs in that section. To date haven't heard of him bagging any game and wonder what he feeds the dogs.--Challis Chinook.

"Bill" Mace Joins the Boosters: Now comes Supervisor Mace with some mighty fine National Forest publicity in attractive advertising folders recently issued by the Cedar City Commercial Club. "Bill" is president of the Club, by the way, and the Dixie-Sevier is not going to be overlooked in all this southern Utah boosting for Bryce and Zion Canyons.

1921 Work by Commercial Club: Out of 457 votes cast at the Salt Lake Commercial Club on "What shall we do in 1921," 201 favored good roads; 186 favored encouragement of irrigation and reclamation; 180 favored an industrial survey of Salt Lake City; 168 favored equalization of freight rates; 157 extension of the public park system; 156, additional facilities for tourist camping grounds adjacent to Salt Lake City. There were four other activities which received over 140 votes. It is quite noticeable that three of the largest vote getters deal with subjects common to our own work.--Wasatch News Letter.

How Many Does He Own? "I have a few horses, and don't turn but four horses out and feed two. I have no horses. I sold one of my horses. I will pay for taxes. Not for my horses. I got no money and I don't get none. I got no money. I got no very many horses. Three isn't mine but my granddaughters. I have only four honses of my own. I want to pay taxes no for my horses but my ranch. If I work I half to bye grub. From Indian Bob."--Nevada Nugget.

McBurns Fire Trespass: In the case of the United States versus Chas. McBurns, accused of wilfully and maliciously setting a string of four fires on the Klamath National Forest, which was tried before the United States District Court, Judge Gery presiding, Saturday afternoon and evening, the jury brought in a verdict of acquittal with the recommendation that a careful investigation be made to determine the practicability of bringing an indictment against two of the main witnesses for the Government. The Government was ably represented by Mr. Woods and the defense similarly taken care of by Mr. French. After about 20 minutes deliberation the jury came to the inevitable conclusion that there was a serious doubt as to whether or not McBurns set the fires in question.

District 5 - California District

New Recreational Use: The numerous applications for camps for municipalities, clubs, employees of business organizations, etc., in District 5 brings to the fore a new form of recreational use midway between the public camp ground and the summer home, and gives a further indication of the very extensive use of the National Forests for all kinds of recreational purposes that the very near future will bring.

Four municipal camps, where a two weeks' vacation may be obtained at a cost of from $12.00 to $18.00 (transportation included), are now in operation; permits for two more have been issued and several other tentative applications are on file. Many of the Forests now have schools, clubs, Y. M. C. A's, Boy Scouts, churches, etc., as permittees, and now some of the big business organizations are erecting summer camps on the Forests where their employees may obtain an outing at cost. Probably the largest camp of this kind now in operation here is that maintained by the Pacific Electric Railway Company in the San Bernardino Mountains on the Angeles Forest.

Taking the cue from this development numerous other organizations and clubs have developed or plan to develop such camps and Supervisor Allen of the Angeles now has on hand more applications of this kind than he can accommodate. While this condition does not as yet exist on other California Forests, it shows what may be expected as recreational use increases in volume.

The fact that numerous camps of this kind are now in operation results in many inquiries for information, and the latest tentative application to the District Office is from the Federal Reserve Bank of San Francisco which is seriously considering the construction of a summer camp for its 1200 employees on one of the Sierra Forests.--L.A.B.

District Conference: An Allotment Conference and Meeting of Forest Supervisors in District 5 was held at Mather Field near Sacramento January 31 to February 5, inclusive. In attendance were all the Supervisors, a few Deputies, Grazing Assistants and Rangers, and members of the District Office.

The meeting was a decided success in every respect and the Commanding Officer of Mather Field placed at the disposal of the meeting ample facilities of every description. All the members present had an opportunity to learn how the work of the Air Service is conducted, and nearly every Forest Officer had the pleasure of one or more flights with the Army pilots.

During the meeting the value of the fire studies being conducted by the District 5 office of Research were brought out more strongly than ever and the meeting went on record as favoring the extension of these studies as rapidly as men and funds will permit.

District 7 - Eastern District

Improvement Cuttings: Officials in District 7 notice with interest the account of an experimental Christmas tree cutting on the Pike National Forest, as outlined in the Bulletin of February 7, 1921.

An interesting chapter can possibly be added to the Pike's experiment by making mention of the Christmas tree sales which have been carried on on the Wichita Forest. At the gate of the Wichita a couple of days before Christmas a Forest Ranger stands and makes out Forms 861 for the various applicants for Christmas trees. The applicant is directed to a certain section where a Forest Ranger is found cutting red cedars and handing them over to each party who presents his properly signed 861. The Supervisor of the Wichita in making these sales does not attempt a thinning, nor does he have any surplus brush to pile and burn because in cutting his trees he cuts them off just above the first thrifty, well-developed limb. The result is that after a few years the remaining limb straightens out and develops into the bole of the tree, thus saving for nature the time it takes to develop a substantial stem and root system. Try this some time with your cedars.

Grazing Boom on Monongahela! for Rent

Jenningston w Va Dect 2 1920

I Have 11 Ews and won buck too rent out for the Seazen till Dect 2 1921
Eny Bidy got good Paster and take good cear of them can have them for Half the woll and half the Lambs

oners
Sarah Long
M A Long

SERVICE BULLETIN

U. S. Forest Service

Washington, D. C. - February 28, 1921.

(Not for Publication)

WHAT'S THE USE?

(Forest officers, and especially Research men who are trying to make their work known to the public, will appreciate the point of the following clipped item.)

The man who gives up his lifetime to putting science at the service of business finds himself eternally asked, What's the use? Statesmen rise from their seats and say:

"I see that some scientist fattening at the government trough has measured a hundred-thousandth of an inch. What's the use?"

Hard-headed--solid-headed--business men read of research departments and snort in disgust: "'What's the use?' The old rule of thumb is the common sense way."

We think of railroads as progressive--of railroad men as efficient. Are they? Not if the Railway Age is to be believed.

There are only two test plants for locomotives in the country, one owned by the Pennsylvania, the other at the University of Illinois. Only a handful of railroads try out locomotives on road service by means of a dynamometer car. What's the use?

One road that did found that by putting an exhaust tip 3/8 of an inch smaller on a Mikado type locomotive it increased the fire-box temperature 400 degrees and saved $57,000 a year in coal. On another line tests made it possible so to alter a locomotive as to reduce its fuel consumption 10 per cent and permit it to haul three more passenger cars on less coal and water.

That's what's the use!--The Nation's Business.

Are Lightning Fires Preventable?

By W. N. Sparhawk--Washington

No, this is not a plea for equipping the trees with lightning rods. Let's leave that until somebody invents a wireless lightning rod. But isn't there some other way to make our forests more nearly lightning proof?

It is customary to group the causes of forest fires into two categories: preventable fires, caused by human agencies, and those which can not be prevented, caused by lightning. I want to raise the question whether the latter class are necessarily inevitable. Did you ever stop to figure out just how lightning fires start? Some figures which I collected from the individual fire reports for several of the Forests in District 3 throw an interesting light on this point. Out of a total of 459 fires caused by lightning during a given period, the reports showed that 149 started in dead snags, 37 started in live trees, and for 273 the origin was not specified.

Considering only those whose origin was specified, 80 per cent started in dry snags. The question arises,--Would these fires have started if the snags had not been there? Of course the lightning would probably have struck, as it does in thousands of other places every season without starting fires, but would it have ignited the green trees or the litter?

The article by Durbin and Weaver in the February 7 Bulletin encourages me to suggest one way of reducing the lightning hazard, even though, as Headley pointed out in his introduction to that article, the systematic removal of snags has always been considered absolutely impractical and unthinkable. Durbin and Weaver say that the presence of snags makes fire fighting more difficult and costly. True, but how about the starting of fires, too? Perhaps snag removal will also remove a lot of the fires, so we won't have to fight them at all. Lightning fires are in many respects the toughest proposition we have to meet, because of their habit of picking the most out-of-the-way places to start, and their liking for company--their tendency to come in bunches. If it is possible to materially reduce their number by removing dead snags in the places where lightning is most likely to strike--and I believe that it is possible--may this plan not be worth a little serious consideration?

Are Lightning Fires Preventable? (Cont.)

If the field men, in reporting fires during the coming season, would take the trouble to note in the case of each lightning fire whether it was caused by the bolt striking a dead tree or a green one, I suspect that we should discover some very interesting and perhaps useful facts that none of us realized before.

Appreciation

Mr. Paul G. Redington,
U. S. Forest Service,
San Francisco, Calif.

Dear Mr. Redington:

Upon my return from the West Indies, I find on my desk the splendid gift from the members of the National Forest Districts and the Forest Products Laboratory, and also your very cordial letter transmitting it.

I am very much touched by this act of friendliness and personal regard. It means more to me than I can express in words; it is a source of very deep gratification.

Every one in the Forest Service is working to serve the interests of the public and the country. There is always in thought also the desire to serve, to protect, to help the Forest Service itself. The common public purpose and the spirit of mutual sympathy and helpfulness knit the members of the organization together. I feel that I am still a part of it. This testimonial that I have just received only strengthens that feeling. The Service will continue to find me working with it, fighting its fight, and doing what I can to forward its interests.

You and your associates know very well my personal tastes, for you could not have chosen a more acceptable gift; doubly pleasing because made in a Service establishment. I wish that every one who participated in this gift might see it.

Very sincerely yours,

Henry S. Graves.

Dear Redington:

It was an exceedingly pleasant surprise upon my return from Mexico to find your letter and the beautiful present from my friends in the Forest Service awaiting me.

Nothing could have pleased me better or have been more useful and I can assure you that it will be put to good use next summer.

There is a feeling of comradeship among the men who have helped bring the Forest Service safely through the storms akin to that among the pioneers who have fought the battles of the frontiers. It is something which will endure as long as we live and the thoughts of which will always bring pleasant memories. I thank you one and all for this kind remembrance and wish you everlasting success and happiness.

Sincerely yours,

Albert F. Potter.

Field Supervision

By R. L. Campbell--Washington N. F.

There is much discussion of field supervision. Evidently the present practice is not entirely satisfactory. In any event, the "needle" has not yet settled so as to point in a given direction.

Field Supervision (Cont.)

Some say field supervision is inadequate and superficial. Perhaps this is due to the fact that the time spent by non-Forest officers with each District Ranger in the course of a year does not average very high. The latter is likely to form his opinion from the duration of this intercourse. Doubtless all agree that there is not as much time spent in the field as there should be.

But the pertinent fact is that there is as much field supervision now as there is likely to be under the present distribution of official responsibilities. On the one hand, the desire to keep down overhead precludes any increase in the number of supervisory officers. On the other, failure to multiply District Ranger responsibility more and more utilizes the time of those we already have.

If we are short of field supervision, why not figure out a scheme where we will not need so much of it?

It may seem a paradox to say, "Give a man more important and more varied tasks and he will need less attention," but is it not so?

The real necessity for supervision is not measured by the number of men at work. Neither is it gauged by the variety of their tasks. It is judged by the results they accomplish. If the rank and file are not doing much the need for supervision is great. If they are getting results, that need is small. Big accomplishments come from being forced to carry the load. Hence, any plan which gives the District Ranger added authority, added duties, added responsibilities, cuts down the need for supervision.

The District Ranger who is made to regard his District as a genuine unit of administration, for which he is responsible, and for which he must take the initiative in applying each progressive step, will know his district better, will make less mistakes, will do higher class work and more of it than the one who is constantly reminded of his deficiencies, fancied or otherwise, by limitation of activity.

This sort of a readjustment of duties cuts both ways. Increased Ranger responsibility will not only decrease the amount of supervision needed, but will give supervising officers more time in which to perform what is left. Work now handled by the Supervisor and District Forester would be taken over by the District Ranger. A condition would thus arise where the man most familiar with field conditions would make more decisions in the first instance.

The objection that supervising officers do not put in enough "effective hours" in the field would be automatically met. The more importance attached to the position of District Ranger the more necessary it becomes to consult with him. The greater the value of his records, the more time spent at his headquarters. The tendency would be to take the supervising officer to the work instead of the work to the supervising officer. There would be more contact between the individual Ranger, acknowledged to be the key man in the Service, and those above him in rank.

The Imponderables

By Roy Headley

One of the curious things about the life of the Forest Service is the way men leave it and then come back. It is not that the fields of business prove less profitable than they looked in the distance. To say that men find that they can not make as much money outside as inside the Service is not an acceptable explanation of the familiar incident of the man who comes back, after departing from us, expecting to spend the remainder of his days outside the Forest Service.

What is it that pulls men back? What is the elusive charm which binds men so closely to an employer that is so thoroughly, and often so justly, berated as short-sighted and penny-pinching. Many theories are advanced to explain the curious hold the Forest Service has on its men--pure and high idealism, freedom from the usual control of the ordinary boss, gratification of vanity in positions of authority, variety of work, and many other such causes.

Among the ties that bind to the Forest Service, perhaps the joy of association with comrades of a sa[illegible]ng fineness should be given more than the usual recognition. The men [illegible]ave and then come back would doubtless deny that the comradeship of public service was what brought them back, but they are probably no better able to probe to the ultimate in their search for the reasons for their return than are those others who have not had the experience.

Whether or not it is the satisfaction of the contacts in the freemasonry of public service that holds men, and pulls them back when they escape, it is nevertheless true that the associations of the Forest Service are to be reckoned among the "imponderable" but important compensations of the life. Did you never hear a meeting by two members of that pioneer group which arrogated to itself the title of "old guard?" If you have heard such a greeting you will not forget the sparkling eye, and the laugh of pure joy as the present whereabouts of "Cock-tail Jim" and "Sweetie Jones" and "Cupid Swanson" were discussed, and the exploits of bygone days recounted. The "old guard" lived and worked under emotional stimuli that helped them to cultivate and enjoy an unusual degree of the fraternal spirit of men bound together by allegiance to a great cause and a great leader.

But the "old guard" had no monopoly on the joy of comradeship. It is the fashion of some men now-a-days to say that the spirit (esprit de corps, I think is the usual word) of the "old guard" no longer lives--that the Service of to-day has a poverty of idealism and altruism. Is it not about time to challenge and brand as false any such reflection on Forest Service traditions? Not only is the idealism and altruism of to-day worthy of comparison with the "good old days" but the comradeship of to-day--surely nothing could be finer.

Members of the Forest Service who have the opportunity to travel, marvel constantly at the high quality of the Forest officers met. I believe it is true that every Congressman or public official who has come in contact with any number of the field employees of the Forest Service has been made our friend, because of the impression made upon him by the character of the men.

When you begin to inquire why our men should be able to make such an impression, you come sooner or later to the fact that there is something in public service which makes them fine. The wholesome purposes, the clean life, and the association with men of quality, combine to form an environment which can not be excelled in any other line.

I have a vivid recollection of a long evening during the war when I listened to a discussion on labor and production. Every man in the room had a selfish interest to serve, and nearly every man was trying to pretend that he did not. Every man suffered in his grasp of the facts and in his ability to think things out, because of the paralyzing power of his pursuit of selfish interests. There were but two exceptions, and the two men who did not show the blight of the pursuit of private profits in war time, were two members of a university faculty. These two men had an admirable grasp of the facts, and it was an inspiration to follow their thought and watch their handling of their material. They were merely manifesting the power of public service to produce comparatively greater development of the human mind and soul.

Pure vs. Mixed Stands in Future Forests

By E. P. Meinecke, D-5

Marking for cutting on National Forests in the early days was largely guided by considerations of the immediate money values coming from the sale of stumpage. Later the future of the cut-over stand became a factor of at least equal importance. More and more it is realized to-day that the composition of the future stand is an important factor. While it is anticipated that such stands will be composed of the more valuable species only, in practice the management of timber sales can give no definite certainty of the desired result.

The bulk of the forests in California are composed of two to five species, sugar pine, yellow pine, Douglas fir, incense cedar and white fir, of which only the first two named are at present considered desirable. If it were possible to eliminate incense cedar and white fir or even Douglas fir so that future stands would be composed only of yellow or sugar pine, the temptation would be great to shape the handling of timber sales so as to attain this end. As a matter of fact, the disinclination of many purchasers to buy large quantities of inferior species tends to heavier marking of the more valuable ones, and the danger exists that the cut-over stands will be predominantly stocked with inferior species.

The wi [illegible] ifornia make it more than questionable whether, from a point of view of yield per acre, the mixture of different species presents the most ideal condition. European literature of the last century is full of discussions on this point. One group, emphasizing highest possible yield, advocated pure stands of a single species or at best stands composed of two species closely related as far as requirements and growth habits are concerned. Another group while admitting the possibility of higher yield in pure stands, condemned the practice on account of the resulting exhaustion of the soil, and above all on account of the increased violence of insect and fungus attacks in pure stands.

A recent publication by Mr. Badoux, Professor of forestry at Zurich, Switzerland, on the damage caused by a spruce insect (*Nematus abietum*), gives a short resume of insect devastations in the past. He recalls the various epidemics caused by the so-called "nun," a moth which in Poland and Volhynia alone necessitated the clean cutting of 350,000 acres of valuable pine forests within 15 years, equalling roughly 26 billion feet b. m. The Professor states: "The most dangerous of these insects attach Scotch pine. The scarcity of this species in Switzerland alone explains to a large measure why Swiss forests have generally been spared. But the main reason is that in Switzerland the homogeneous forest composed of one single artificially established species does not exist to any extent. The mixed forest predominates in our country, and thanks to this composition, imitating natural forest conditions, we have had little to suffer from insects."

Badoux then passes to the subject of *Nematus abietum*, a small wasp, the larvae of which live on buds and young needles of spruce. In the last century the insect was little known and little studied on account of the insignificant damage caused by it. The most serious attack started in the Naunhofen forest, also in Saxony, in 1892. In 1912 the losses had become so great that it was decided to abandon the cultivation of spruce altogether. One-half of the forest was a complete loss.

It is significant that all these serious attacks have taken place in Saxony.

No forest administration has gone as far in following the principle of selected species in pure stands as Saxony, where the experiment of deliberately transforming a very large part of the forests into pure spruce has been undertaken. The above mentioned Naunhofen forest is not a true spruce site. Originally it was a broad-leaf forest.

Badoux ends with these words: "Whenever silviculture attempts to violate natural laws a reaction is sure to follow. To imitate and assist nature is the fundamental principle of silviculture."

In the Western forests a deliberate choice of species to follow a first logging has not yet been made beyond a general desire to further the establishment of "valuable" species. The problem becomes more urgent from year to year. The time for constructive discussion, at least, has come.

Is It That Bad?

Dear Editor: You said to "Be Frank"--so here's where I be.

You have a thankless job which none of us would accept--and you say you want help. But if we help you we must write on one side of the paper and follow 12 commandments, which you know blamed well no Ranger can comply with and keep a district going. If this don't suit, to H - 1 with you--run your own boat. You're probably drawing your nice, fat $1,400 in Wash. and wishing you had a Ranger district with a pasture, garden and truck patch free, and the privilege of writing to the Bulletin or letting it alone, instead of having to put the darn thing out in readable form once a week.

You have Districts 1 to 8 to draw from while we, the Rangers, have a few thousand acres about which there is little of interest to print. Do the best you can, but quit hollering for help unless you get to where you're not so particular.

We cull what we need from "Efficiency Bill" and "Out of the Tall Timber"; also from "The Protection and Improvement Problem." If we are capable of gleaning *anything* from "Normal 1 to 19.2; Height of Season 1 to 21.5, etc., etc., we glean it, and don't worry you with the time we waste trying to *savey* it. In other words, print what you please--some of us will get information which we really hunger for, while others of us only have the time and capacity for such as "Ranger Bill Says."

Is It That Bad? (Cont.)

Some day when I get some of the "big guns" who write this high-falutin stuff in the Bulletin, down at the corner of the rail fence where the blackberry vines are too thick for a retreat, I'm going to tell 'em a few things--which they probably knew once, but have forgotten.--A Ranger, D-7.

(Note:--You forgot to add the bonus to my salary, but even at that I'd like to have that truck patch.--Ed.)

At The Door

He wiped his shoes before his door,
But ere he entered he did more:
'Twas not enough to cleanse his feet
Of dirt they'd gathered in the street;
He stood and dusted off his mind
And left all trace of care behind.
"In here I will not take," said he,
"The strains the day has brought to me.

"Beyond this door shall never go
The burdens that are mine to know;
The day is done, and here I leave
The petty things that vex and grieve;
What clings to me of hate and sin
To them I will not carry in;
Only the good shall go with me
For their devoted eyes to see.

"I will not burden them with cares,
Nor track the home with grim affairs;
I will not at my table sit
With soul unclean, and mind unfit;
Beyond this door I will not take
The outward signs of inward ache;
I will not take a dreary mind
Into this house for them to find."

He wiped his shoes before his door,
But paused to do a little more.
He dusted off the stains of strife,
The mud that's incident to life,
The blemishes of careless thought,
The traces of the fight he'd fought,
The selfish humors and the mean,
And when he entered he was clean.--Edgar A. Guest.

Waste of Pulpwood in Western Oregon

H. E. Haefner, Siskiyou

The trend of modern logging in the Douglas fir region of western Oregon is toward larger and heavier equipment. The logger is backing into a rough mountainous country and the equipment must be heavy to get out the logs. The result is that enormous quantities of small material are left in the woods to be destroyed later by slash fire. This material consists of large and small poles, small piling and short length logs. Short length logs do not fit in with long logs aboard the car and are left behind.

The forest will average about 85 per cent Douglas fir with western hemlock, western red cedar, Sitka spruce and Port Orford cedar making up the remaining 15 per cent. Most of these species can be used for pulp. In cruising these stands 20 to 45 per cent of the gross cruise is deducted to get it down to a car scale basis. This is represented by defect, breakage, and the small timber that is destroyed.

Waste of Pulpwood in Western Oregon (Cont.)

One operation in the Coos Bay region has an annual cut of about 150 million B. F. of lumber and it is safe to say that the area of timberland that supplies this will show a gross cruise of over 200 million B. F. Of the 50 million B. F. that is wasted about 15 million is rotten Douglas fir. The remaining 35 million largely represents the annual loss in pulpwood that this company bears. The annual cut of lumber by the group of sawmills on Coos Bay is around 300 million B. F. with the utilization of timber in the woods about the same as that described above. The annual loss of pulpwood in this region is estimated at around 70 million B. F.

The Coos Bay region has established logging railroads from the woods to the mill and steamship lines to San Francisco and Portland. With contemplated harbor improvements, large lumber carriers will carry lumber direct to the Atlantic seaboard. It has a hinterland that carries around 50 billion B. F. of merchantable timber. With a continuation of the same methods of logging and the same utilization of material as is now practiced, the loss in pulp material during the logging of this timber will approximate 9 billion B.F. Under the present practice this will go up in smoke.

If raw material can be shipped from northern Canada to the paper mills of the East, and if the forests of Alaska can be opened up at a profit, it would seem that some plan could be worked out to prevent the waste of millions of cords close to tidewater along the Oregon coast.

Ranger Bill Says:

"Inspiration, I reckon, lies mainly in the difference 'tween livin' in a smoky city and out among the big things."

"I ain't heard of any Forest officers that's goin' to be lookin' fer a new job 'long about the first of March."

"Fanny Watkins, the Super's. S & T hasn't missed bein' late a mornin' since she got back from her detail in Washington."

New Legislation in Congress

Extra! February 17.--Mr. Johnson of California introduced a bill appropriating $25,000 for the establishment of a forest experiment station in cooperation with/the University of California.

Land Exchange: On February 19, the Senate passed the bill (H.R.8692), authorizing the exchange of lands within the Montezuma National Forest, Colorado, which now goes to the President for approval.

Ranger Station: Bill for exchange of lands for Ranger Station purposes, with A. A. Bruce, La Veta, Colorado, by which the Service gets 10 acres of cultivable land for 160 acres of grazing land in the San Isabel National Forest, has been presented to the President for approval.

FOREST PRODUCTS LABORATORY

Western Clay for Paper Making: Have you ever found a bank of whitish clay that furnished an excellent substitute for soap? A highly colloidal clay existing in large deposits in the Rocky Mountain region, and of little known use except for cleansing purposes, has proved in trials at the Laboratory to be valuable as a loading material for giving finish and printing qualities to paper. This discovery is of some importance to the paper industry, because heretofore the best clays used for this purpose have been imported. When the new American clay is added to the English China clay generally used, the paper produced has a superior finish and appearance and a more velvety feel.

Identifying Oak Woods: Over fifty species of native oaks assume the proportions of trees, and about twenty-five are used for lumber. After the oaks are cut into lumber, there is no means known to the Laboratory by which they can be identified as to exact species. By examination of the wood alone, however, it is easy to separate the oaks into two groups--the white oaks and the red oaks; and for most purposes, fortunately, it is not necessary to classify them any further.

The white oak group includes true white oak, swamp, bur, cow, post, overcup, and chestnut oak. The red oak group includes true red oak, yellow or black, scarlet, Spanish, Texan, black jack, water, willow, and laurel oak.

The color of the wood is a ready but not absolutely reliable means of distinguishing the white oaks from the red oaks. Red oaks usually have a distinctly reddish tinge, especially near the knots. The wood of the white oaks is generally a grayish brown; but occasionally a reddish tinge is found in lumber.

For more accurate identification it is necessary to examine the pores of the wood. These will be found as tiny holes on a smoothly-cut end surface, the largest being visible to the naked eye. They are not of uniform size throughout each growth ring, but are considerably larger in the wood formed in the spring, decreasing in size rather abruptly toward the summerwood. The large pores in the springwood of the heartwood and inner sapwood of the white oaks are usually plugged up with a frothlike growth called tyloses, and those of the red oaks are open. This feature, however, is not so reliable for classification as the character of the much smaller pores in the summerwood.

To tell for a certainty whether a piece of oak belongs to the white or red oak group, cut the end of the piece smoothly with a sharp knife across several growth rings of average width. With the aid of a hand lens examine the small pores in the dense summerwood. If the pores in this part of the growth ring are plainly visible as minute rounded openings, and are not so crowded but that they can readily be counted, the wood belongs to the red oak group. If the pores in the summerwood are very small, somewhat angular, and so numerous that it would be exceedingly difficult to count them, the wood belongs to the white oak group.

Difference Between Molds and Wood Fungi: Not all fungi which live upon wood impair its strength, but conditions which promote the growth of molds, blue-stain fungus, and other non-injurious fungi are usually favorable to the growth of the wood destroyers, and these may be active on the same wood bearing the molds. Hence, the presence of mold on timbers intended for any structural purpose should cause them to be looked on with suspicion.

In the early stages of their growth the molds and the wood-destroying fungi sometimes have a very similar appearance, making it difficult for the inexperienced to separate them at sight. The surface growth of molds is generally cottony or felty in appearance; the mycelium or fine mold threads being interwoven, but never compacted into membranous sheets or strands. The mycelium of wood destroyers may be fluffy and glistening, but more usually are compacted into strands or fan-shaped patches.

The characteristic feature of mold growth on wood is the fact that the minute threads which enter the wood do not bore into the wood fibers or dissolve them away. They pass through the spaces between the fibers or enter them through the natural openings, called pits, which are found in the walls of certain cells. Starches, sugars, and other contents of wood cells constitute the food of the molds.

The wood-destroying fungi are able to send their threads right through the wood fibers, breaking down the cell walls and utilizing portions of this decomposed material as food. This action very markedly weakens the wood, making it crumbly, stringy, or spongy--in other words, producing rot or decay. The presence of wood-destroying fungi in an advanced stage of growth is evidenced by fruiting bodies, commonly called mushrooms, toadstools, conchs, or brackets.

The principal economic loss caused by molds is through the staining or discoloration of the wood. No greater injury may be caused by the wood destroyers in their early stages; but their work will continue and finally result in the destruction of the wood if favorable moisture and temperature conditions prevail.

District 1 - Northern District

Missoula Meeting, S.A.F: The Missoula Section of the Society of American Foresters recently had the first meeting of the winter season, at which Forest Examiners H. R. Flint and D. S. Olson presented papers.

Mr. Flint discussed the proposed Demonstration Forest for Fire Protection. He emphasized that the idea was demonstration rather than experiment. It would contemplate putting into effect on a particular Forest unit all the measures that the Forest Service has come to feel necessary for the ideal fire protection scheme, but which the Service has been unable to put generally into effect because of financial limitations mostly. The idea would be to demonstrate, first, to the Forest Service itself just what it could accomplish if given opportunity; second, to the general public as an educational measure and third, to Congress so that they may realize what results adequate provision might make possible in the line of fire protection.

Mr. D. S. Olson discussed the subject of past progress and future plans in planting. Outstanding among his statements is the emphasis placed on the enormous job there is to be accomplished in the District. The fires of 1919 brought the total estimated acreage of land in National Forests in need of planting to 750,000 acres. Probably about 300,000 acres of this area are in the white pine type where planting is at present being concentrated. The rate of planting is now 3,000 acres a year so that it would take 100 years to catch up on the present handicap provided fires did not increase the total area. The present Savenac Nursery with a capacity developed of 3,000,000 plants per annum can be brought to grow as much as 9,000,000 plants. It is probable that in the future, considering the Forestry Extension Program planting activities in the District will increase many fold.

District 5 - California District

Mt. Lassen Again Spouting: Regarding the recent reported eruption of Mt. Lassen, Supervisor Dunston of the Lassen Forest writes: "I have asked several people about it and have gotten conflicting reports. However, the consensus of opinion is that Mt. Lassen has been spouting recently. A resident of Red Bluff watched the mountain through powerful field glasses nearly all last Sunday (6th). He states that he distinctly saw heavy clouds of smoke and ashes arise from the crater at intervals throughout the day.

The District Forester literally dropped in on us one evening last week, having made the trip from Mather Field near Sacramento to San Francisco in one hour, via the Airplane Route, returning to the field the next morning in the same manner.

Arthur F. Fischer, Director, Bureau of Forestry, Manila, P. I., was a visitor at the District Office February 2. Mr. Fischer has been back to the home country for the past several months during which time he visited practically all the Forest Service District Headquarters. He expected to sail from San Francisco February 5.

Tire Dope: Reference to second paragraph on top of Page 13 of Washington Weekly Bulletin of Dec. 20-27, 1920, regarding costs of cord tires vs. fabric:

This statement might lead jitney-driving Forest Officer to believe that cord tires were the most economical form of tire equipment at all times. However, Supervisor Tom Sloan of the Santa Barbara National Forest and myself at the suggestion of the District Forester made a special study of this subject while on detail in the San Francisco office. We interviewed a great many of the leading tire experts, but secured more information from the sales manager of the Firestone Tire & Rubber Company than from any of the other firms. Here is his statement, condensed:

"For straight valley running, cord tires are very much more economical. For straight mountain running, over rocky, rutty road, fabric tires are the more economical. For mixed mountain and valley running, it is about a standoff, depending, of course, on the amount of travel in each section."--W.S. Brown, Modoc.

Two Bad: President of the Wild Flower Preservation Society wrote to the Department of Agriculture for a certain Bulletin on Forestry and another one on Mushrooms for the book table at their Exhibition in the Art Institute. In due time arrived 250 copies of "How to make unfermented grape juice" and 250 copies of "Hog Cholera."--S. F. Chronicle.

(Are you sure they didn't ask for the "grape-juice" receipts?)

"Assistant District Forester Rachford," says the California Wool Growers Association in the minutes of their annual meeting "goes to a larger field in Washington; his particular objective during the next two years is to work up a plan of classification of our Forest ranges under which their fair commercial values can be arrived at."

Cooperation with Army Air Service:

My dear Mr. Redington: I to-day received a copy of your letter to the Air Officer, Ninth Corps Area, in which you quote a resolution passed by the Supervisors at their recent meeting at this Field, expressing appreciation of our hospitality and cooperation.

I wish to assure you that the friendly spirit which you encountered was not superficial but emanates from a feeling of comradeship which the personnel of this command feel toward the men of the Forestry Service.

We have a work of unlimited possibilities in common and it is felt that success will be measured largely by the degree of cooperation and mutual understanding of the problems of each service which we attain.

Mather Field is undoubtedly the center from which the future development of Aerial Forest Patrol will grow, and, as its present Commanding Officer, I wish to take advantage of every opportunity to stimulate interest in Forestry matters and to gather knowledge of Forestry methods into the Command. I believe that the Supervisors' Meeting and the School for Liaison Officers which is now closing have been of great mutual benefit and that their value was by no means limited to the classroom and assembly hall.

I wish to extend a permanent invitation to the Foresters of California to visit Mather Field and to extend a rather insistent invitation to the Forest Supervisors to hold their annual meeting with us next year.

Yours truly,

B. M. ATKINSON,
Major, Air Service, Commanding.

District 7 - Eastern District

Pisgah Poachers Pinched: One day last December, Forest Ranger Brigman had a tip that one of the logging railroad engineers with a firm operating the timber in Pisgah Forest, was out having a good hunt. This particular engineer, one Jones by name, had often eluded the wardens in previous years by secreting deer in his coal tender or in the water box, or under the seat in the cab of his locomotive. The Rangers and wardens had wanted his scalp for a long time.

It was 3:00 p.m. when Ranger Brigman got his information. He at once got out his railroad speeder and rode three miles to Ranger O'Kelley's station and there the two officers laid their plans. They summoned Perry Davis, a Game Warden, and two special use permittees, together with Don O'Kelley, son of the District Ranger. By this time it was nearly dark. The plan as carried out was as follows: Ranger Brigman left his speeder on the track and accompanied by Don O'Kelley and one permittee went up the railroad about 200 yards and hid behind a small powder house. Ranger O'Kelley, Davis and the other permittee crossed Davidson River and stationed themselves on the Pisgah Motor Road at a point opposite the position occupied by Brigman. A cold rain was falling and this, coupled with the blackness of the night, made waiting uncomfortable.

About 9:00 p. m. Brigman's party heard the noise of the lever car up the track. When it appeared within a distance of 30 yards, Brigman threw his flashlight on it, saw the car slow down and the occupants push some object off the car into the right-of-way. Then the car gained speed and came on down the track. Brigman made a lunge as it went by and luckily grasped a handle on the down stroke. The up stroke helped to land him on the car and in a few seconds he had thrown the weight of his body across the handle and succeeded in slowing the car down long enough for Don O'Kelley to get on. Don and Brigman for a couple of minutes were able to stall the car, but the two poachers were large husky men and they succeeded in getting under way. Meantime, Brigman had flashed a signal across to O'Kelley's party and the three men there, hearing the car under way and thinking the poachers had fought off Brigman's party, started to run as fast as they could go down the muddy road to a foot bridge where they hoped to cross and cut off the lever car as it passed. The night was black and they could not see, but they managed to keep the road. Davis ran into a horse with his rider, full tilt, but was unhurt. While this was taking place, Brigman managed to get the lever car stopped by telling Jones and his companions that his own speeder was but a short distance away and that a wreck was a matter of seconds. When all the party got together and flashed lights on the prisoners, it was observed that both of them had *blackened* their faces. The Rangers found the dead deer at the spot where Brigman had first observed the car slow down.

The poachers were allowed to proceed to Pisgah Forest Station, but Jones and his pal had no laughs left in their sleeves that night.

Brigman went to the nearest Commissioner to swear out a warrant, but before it could be served Jones had skipped to parts unknown. The other poacher, however, has been arrested and is now willing to submit and get out of trouble the easiest way possible. We still have hopes of getting Jones before the May term of Court.

Give us a Chance: The administration of the Pisgah Game Preserve has always been handicapped by reason of the fact that the Forest officers can not make arrests in the Forest for violations of the regulations governing the Preserve, the boundaries of which are the same as the National Forest. Every year unidentified men who have killed deer have been able to walk out of the Preserve with a swagger. During the past open season, November 1 to January 31, not less than 6 men have gotten away from dead sure penalties because the wardens did not know them and could not arrest them on the spot. We have begged insistently for years that something be done to cure the defect in the law, but so far without avail. Sometimes we wish that all superior administrative officers had to do game patrol work through one hunting season, in order that they might comprehend what a distressing situation confronts us here every year.

A Novel Proposition was recently made by a nurseryman to the Asheville Office. This man has his nursery within 5 or 6 miles of a severe burn in the Wilson Creek Working Circle on the Boone. Years ago this burn was well stocked with virgin white pine and mixed hardwoods. Following heavy cutting fires swept through and killed all trees left. Since then some sprout growth has sprung up, but there is a noticeable absence of valuable species, though there is a great variety of shrubs such as rhododendron, azalea, leucothoe, etc., which are much sought after by this nurseryman. He proposes to plant free of charge for plants and labor a 2 to 4-year-old white pine seedling for every shrub over 12 inches high he takes out, and one for every 4 shrubs under 12 inches high. The offer has tempted us and under an administrative use permit running tentatively for five years the planting operations will begin in March, 1921. The white pines will be set out wherever the Forest officers decide, and we hope to get at least 10 acres set out this spring.

A False Alarm: On the night of February 13 a fire was discovered on Cave Mt., Bartlett, N. H., (there was 3 ft. of snow on the ground and the branches were loaded with snow). The blaze and glow was in plain sight of the village and created some little excitement. Efforts were made to notify the Forest Ranger and a crew even contemplated going up to suppress it. Later it was found to be a large campfire of a snowshoe party. Bartlett District claims this to be the first fire call for the year 1921 in the White Mountains.--Chas.E.Beals,Jr.

The Wichita to the Front: The idea may prevail in some quarters that there is nothing on the Wichita Forest but buffalo, elk, deer, ducks (and there are thousands of these) and numerous other animals, with perhaps a few stunted trees. I will venture to say, however, that here is to be found the best red cedar plantation in the United States,--two plantations in fact. The largest is one of about 17 acres which was started in the spring of 1914. The trees were spaced 6 x 6 feet on land which had been plowed and which was cultivated during the following two years. This cedar has gone through three very dry years--1915 to 1917, but shows a survival at this date of about 95 per cent. The trees are now 6 to 10 feet in height and 1 to 1½" D.B.H. This is a splendid plantation.

Not being content with starting the best cedar plantation in the country, Supervisor Rush has gone this one better and made the first sale from any National Forest plantation. Just before Christmas, 1919, he sold 80 Christmas trees, and in December, 1920, he sold an additional 150. He does not have to cut the trees and take them to town either. The people come for a good many miles right to the plantation for them. Rush is not satisfied with any 10¢ or 15¢ on the stump. He has asked during the last two years 50¢ for each tree, and he has gotten it without a murmur. Next year he says he is going to boost the price to $1.00.

A very interesting thing has developed from these sales. It appears that if red cedar is handled right it can, like hardwoods, be depended upon for more than one crop from the same roots. The red cedar trees are cut off at a height of 3" or 4" from the ground. This leaves one whorl of branches below the top of the stump. Rush cuts off all of this lower whorl except the most vigorous branch and this immediately starts to turn up, seeking the light, and it now appears that he will be able in a few years to cut off another Christmas tree from the same stump or perhaps grow the material to fence post size. From some of the trees which were cut in the winter of 1919 there are now erect stems 5 to 6 feet in height.--C. R. Tillotson.

How to Measure a River

(Forest officers who assist other branches of the Government in cooperative stream measurement work, or have occasion to secure such data in connection with Service improvement projects, will find the following information useful.)

Choose a place where the channel is straight for 100 to 200 feet and has a nearly constant width and depth; lay off on the bank a line 50 or 100 feet in length, marking each end; then throw small chips into the water and allow them to float downstream, noting the time the chips require to travel the distance laid off on the bank. The surface velocity in feet per second may be found by dividing the distance in feet passed over by the chips by the time in seconds the chips take to travel this distance. The average of several such determinations will give the mean velocity of the surface of the stream. The surface velocity multiplied by 0.80 gives very nearly the average velocity of the whole stream, from surface to bed.

To determine the area of the cross section of the stream, stretch a tape from shore to shore and take the depth of the stream at intervals of 2 to 5 feet. Compute the average of these depths in feet to determine the mean depth of the stream. This average multiplied by the total width in feet will give the area of the cross section of the stream in square feet.

The discharge--that is, the quantity of water flowing in the stream--is found by multiplying the area of the cross section by the average velocity as determined by means of the chips, the result being the discharge in second-feet, or, in other words, the number of cubic feet flowing past the point of measurement every second. A cubic foot contains 7.48 gallons. --U.S. Geological Survey Press Bulletin.

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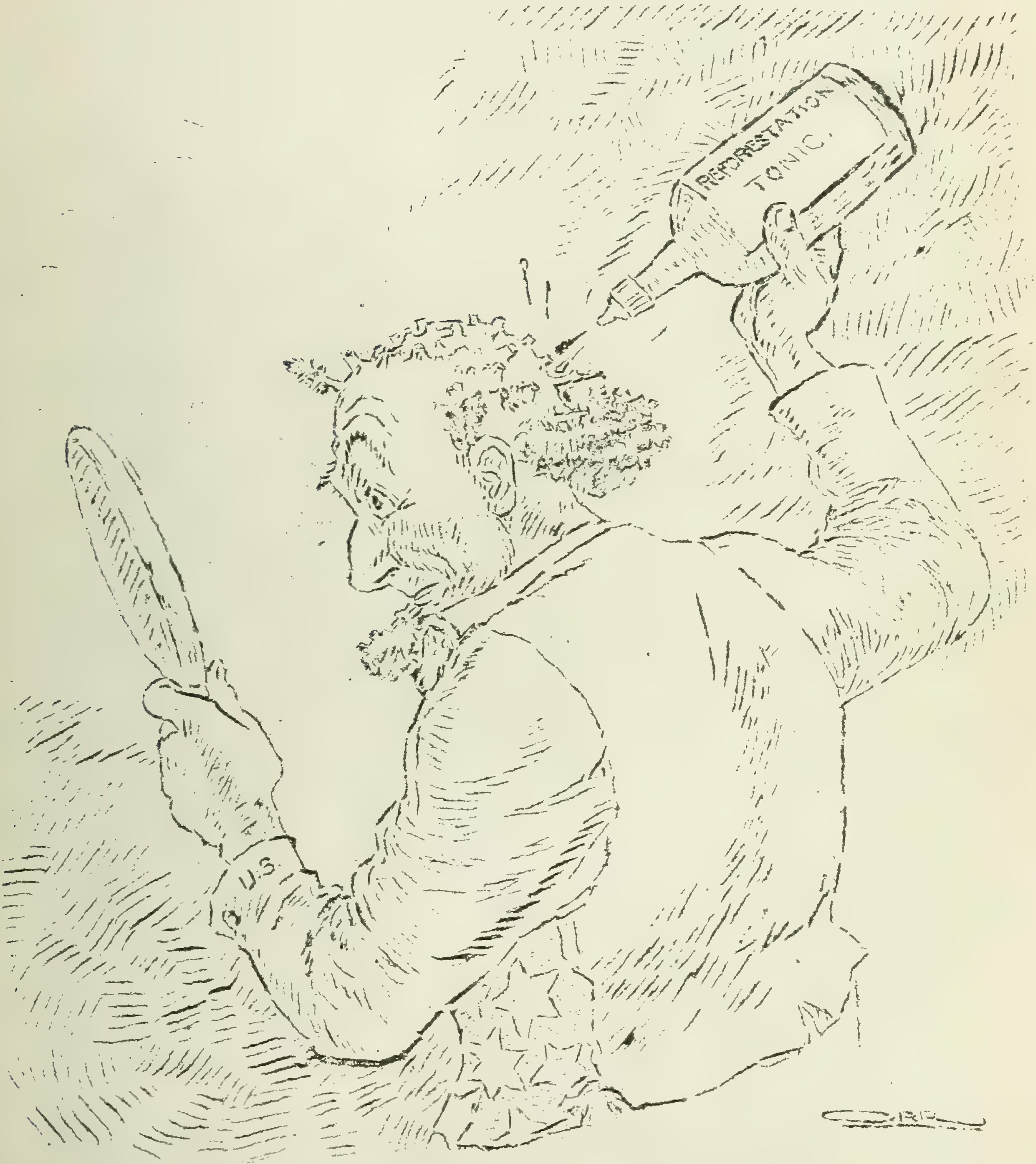
REFORESTATION TONIC
U.S.

BEFORE IT'S TOO LATE.--The Chicago Tribune.

ACCOUNTABILITY

By Col. W. B. Greeley

A group of men in the Forester's office were passing upon proposed purchases of land. The physical features of one tract, as reported by the Supervisor, were questioned. They were "out of line" with former experience and averages. Should a further examination be ordered? Should an inspector go out and check up? Should values be pared down by an "office appraisal?" Decision: Either the Supervisor's findings should be accepted or said Supervisor should forthwith be fired.

"Redeeming responsibility" has been a household phrase in the Forest Service since Silcox coined it--but its application as a working principle is still far from adequate. An officer becomes accountable for Service property when he receipts for it. His measure of responsibility is fixed. He must return the equipment, or show that its loss was not due to negligence or blunder on his part, or else expect a pointed letter of transmittal. We need a corresponding recognition of personal responsibility when a Ranger takes over a district, a Supervisor a National Forest, a District Forester the work of the Service in a State. We need an accountability well-nigh as clear-cut as if the officer should "sign up" for his District or Forest and stand obligated to return it in equal or better condition or to show that its damage from fire or its loss of productivity from poor cutting or bad grazing has been due to no fault or negligence of his own.

Accountability means personal responsibility, but an officer can not be held accountable unless his responsibility has been definitely fixed. We must build up on a conception of the responsibility of the Ranger, of the Supervisor, of the District Forester so clear-cut and well recognized that there can be no evasion when an officer is called to account. Accountability goes with clean-cut obligation. "Passing the buck" results from confusion of responsibility. If a timber sale area is in bad condition from poor marking or slash disposal, who is accountable--the Supervisor or District Chief of Management? If an improvement job has been badly or extravagantly done, does responsibility lie with the District Ranger, or the Supervisor, or the Chief of Operation, or a Forest Inspector who has been put in charge of improvements on a group of Forests? If a fire gets away because of some one's negligence or inexperience, or because extra patrols were not put on soon enough, or telephone lines were not kept in repair, or a lookout station failed to function, or the District Ranger was off on some less important job, who is responsible? In such matters--and others like them--the responsibility must be nailed down and made unescapable.

In fixing responsibility, we can not cut across the lines of established Service organization. The Forester should not undercut the leadership and control of the District Forester. He must hold the District Forester accountable for all that occurs in the District. He must hold the District Forester responsible for maintaining a system of control and discipline sufficient to secure the best results from the personnel of the District. His representatives should inspect primarily the work and efficiency of the District Forester, and not undercut the responsibility of the District Forester in his own field. And likewise in activities for which the Supervisor is primarily responsible, his accountability should not be confused or undercut by the action of men higher up.

The Service has been lax in holding its officers accountable. The family atmosphere, hesitancy to criticize, readiness to overlook mistakes by men whose average efficiency is good, reliance upon conscientious men to take seriously and profit from their own blunders have lead to lax enforcement of clear-cut responsibility. Causes of bad conditions or losses often have not been brought home sharply. Failures and blunders often have not been brought out into the open and recognized as such. We are taking too much bad management as a matter of course.

In plain English, we must tighten up. We must perfect our organization by way of fixing responsibility all along the line. We must eliminate the possibility of "Passing the buck" as far as that is possible in work which covers as wide a range and presents as many new demands from year to year as the obligations of the Forest Service. We must develop the spirit and tradition of responsibility--recognized and accepted--and we must find means of making that an active principle in holding our personnel to essential standards of efficiency. Ways and methods of bringing accountability home must be essentially just, and yet responsibility in many instances would never be fixed if its allocation were delayed until exact and absolute justice could be meted out to every one involved. Exact justice must be sought up to the point where its further pursuit would prevent promptness and decisiveness in meeting the needs and upholding the standards of the organization.

The United States Army has a rigid system of fixing responsibility for bad work. The Commanding Officer names a board and orders a hearing. Formal testimony is taken. Findings are reached which exonerate or specifically hold to account the officer in immediate charge. Action is recommended to the Commanding Officer higher up. This may be to institute Court Martial or to remove the officer responsible. I do not think that the Forest Service should adopt any such set and formal procedure--but I believe we may well follow the principle. If the fire organization on a National Forest breaks down and bad losses result, should not the District Forester, as a regular practice, order an investigation which will specifically fix the blame for negligence or mistakes or faulty organization--if such be found--and bring it home to the individual accountable; and should not every Supervisor know that such an investigation will follow in the train of a bad fire record? Nor should the Supervisor who escapes bad fires by luck escape investigation if inspection discloses faulty organization or negligence or serious errors of judgment. Whatever the method, the principle of fixing responsibility for ba results in protection, in timber sales, in grazing and other major activities upon individual men should, in my judgment, be given more definite applicatio

Disciplinary action must fit the measure of negligence or error. In a large majority of cases, the finding itself will suffice. The organization will respond. If a Supervisor has let his fire protection lag in the pursuit of recreation plans or other less vital things, he will apply the remedy himself once his own responsibility is brought home to himself. If he can not or will not, from faulty handling of the men and funds at his disposal, the District Forester must find another Supervisor. If accountability is shown to lie with the District Forester or Forester for lack of adequate resources, with them rests responsibility for the remedy as far as they can supply it. But let us not gloss over our mistakes or pass up our bad work. Bring it out into the open. Analyze it. Find out just what and just who is wrong. It will make for a more efficient Forest Service.

And by the same token, do we need to bring out more clearly both the good work and the exceptionally fine work of individual officers in the various activities of the Service and give it specific recognition. The principle of accountability should bring into light for its fitting reward the difficult fire situation which has been admirably handled, the timber sale or grazing administration which has accomplished exceptional results, and the improvement job which shows unusual resourcefulness or good management. The progress of the Service is due in no small measure to the work of men who are capable of more than good average efficiency. We must adopt every practical means to make the men who do things exceptionally well stand out in our large organization and accord them the recognition they deserve. Just how this can be accomplished is a phase of individual responsibility which should be developed side by side with holding men to account for poor work. I will be glad of any suggestions on how both of these things can be accomplished.

We can not accomplish all this in a single season. I make no pretense of having thought the matter out or determined the best means for its practical enforcement. But I want to put the column in march toward this objective.

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"Don't worry about the thunder; it's the lightning that makes the hits."

Legislation for Further Road Appropriations

By T. W. Norcross

During the preceding session of this Congress Senator Chamberlain introduced a bill (S. 3982) providing for an appropriation of $400,000,000 for Federal aid for post roads and other purposes, and $100,000,000 at the rate of $10,000,000 yearly for National Forest roads and trails. This bill was referred to the Committee on Post Offices and Post Roads, but no action has yet been taken. In December during the convention of the American Association of State Highway Officials, Representative McArthur of Oregon introduced a bill (H.R.14905) believed to be identical in form with the Chamberlain bill. This bill was referred to the Committee on Roads which held a hearing and then appointed a sub-committee to consider the bill and to make a report. On January 24 the Committee on Roads reported out the Sells bill (H.R.15873) as a substitute for the McArthur bill. This provided for an appropriation of $100,000,000 for post roads and $3,000,000 for National Forest roads and trails. The terms of the bill so far as the National Forest road work is concerned were believed to be very favorable. On February 7, under a special rule, the House considered this bill and passed it by a large majority. In the Senate it was referred to the Committee on Post Offices and Post Roads, but since no action had been taken, and believing that it was very doubtful if the Senate would consider the Sells bill before the end of the session, Senator Swanson endeavored to have the Sells bill added to the Post Office Appropriation bill. The attempt was made on February 17 and 18. A large amount of discussion ensued, but the result was a defeat, the necessary two-thirds not having been secured.

During the discussion of the Swanson amendment, it appeared that the majority of Senators favored further road appropriations. The opposition included a considerable number who believed that the Townsend plan of a Federal system and a Federal highway commission was preferable to the present State aid plan. The opposition also included some members who believed that the financial condition of the country required that no further appropriations be made at this session.

During all of the discussion in both the House and the Senate, the appropriation for the Forest roads was hardly mentioned. There was a very general feeling that no further appropriation for post roads was necessary now owing to the very large undisbursed balance which exists. The arguments for knowing ahead the amount of money available in subsequent years, in order to get money voted by the States and counties and to make the necessary surveys and other arrangements, were evidently not considered of great importance by a considerable number of the Senators.

THE WEST

Men look to the East for the dawning things, for the
light of a rising sun,
But they look to the West, to the crimson West, for the
things that are done, are done.
The eastward sun is a new-made hope from the dark of the
night distilled;
But the westward sun is a sunset sun, is the sun of a hope
fulfilled!

So out of the East they have always come, the cradle that
saw the birth
Of all of the heart-warm hopes of man and all of the hopes
of earth--
For out of the East arose a Christ and out of the East has
gleamed
The dearest dream and the clearest dream that ever a prophet
dreamed.

And into the waiting West they go with the dream-child of
the East,
And find the hopes that they hoped of old are a hundred-fold
increased.
For here in the East we dream our dreams of the things we hope
to do,
And here in the West, the crimson West, the dreams of the East
come true!--Douglass Malloch.

"Gippo" Logging and Timber Sale Contracts

By J. A. Fitzwater--Kaniksu-Pend Oreille

The advent of the "gippo," while in many instances bringing relief to the operator, has introduced a factor in the administration of Forest Service timber sales which requires considerable analysis and a pretty definite understanding with the purchaser.

The "gippo" method of logging is not new. It has been practiced in different parts of the district for years, but on the Kaniksu-Pend Oreille it has not been in use to any extent until the last two seasons. The term "gippo" is merely a slang expression meaning small contractor.

In large operations where the work is bunched and handled by force account, one scaler will take care of 100 M per day without any great effort. Under the "gippo" system of to-day, the scaler who gets 50-75 M per day is a mighty busy man and besides has no opportunity for other work. Furthermore, the purchaser would like to have our scaler keep the scale of the different "gippos" separate and in some cases goes so far as to ask the scaler to keep the saw crews' scale in addition. This condition has grown from a single contractor handling the entire job to the present extreme where with a daily output of 50-75 M we have as many as five or six "gippos" with contracts for skidding and hauling; in addition to this sawing is also invariably let out by the piece or per M. In order that there may be no conflict between the different operations, each "gippo" is blocked out a certain area which he is required to complete, and this naturally means a scattered operation entailing much walking from job to job.

Under these conditions it is not possible to figure on the scaler for any degree of supervision, and it means an extra man for this purpose alone. Ordinarily one man can cover the supervision of several sales, but with the "gippo" condition such distribution of overhead is not sufficient. It is appreciated that the purchaser is responsible for the fulfillment of the terms of the contract, but if results are wanted, the camp foreman needs pretty close supervision. Some of the factors which tend to increase the work of supervision where this system is used are: First, the "gippo" has little regard for our contract, and unless checked currently, ignores stump heights, top utilization and log lengths. Second, in deep snow where a shovel has to be packed from tree to tree, the foreman must be decidedly on the job and make a sincere effort to enforce the contract or our results are far from satisfactory. Third, where sawing is done by the piece, small trees look especially good to our "gippo" friend and unless closely supervised he forgets the meaning of our blaze and stamp. All of these points have added weight when it is remembered that the "gippo" method requires a more or less scattered operation. The contract contemplates our blocking out the season's cut, but doing this for a half dozen separate operations is a quite different proposition compared to a compact operation, especially a season like the present when climatic conditions have suddenly stopped all operations.

To look at the purchaser's side of the question, there are several reasons why the "gippo" labor has been used. It has been possible under the recent labor difficulties to get work done by this method of employment with a reasonable cost. The "gippo's" crew is usually made up of a few picked men. These men are either interested in the contract or else are paid considerably better wage than the average. The "gippo" in charge has a very small force to handle, can have intimate contact with his men, and works with them. Such an organization results in a speeding up of the work and as the contract price fixed for the job is based on what it could be done for with average efficiency by force account, the "gippo" by extra effort makes big money. The company pays very little more for its logs, gets the output wanted, and has a minimum amount of overhead.

It is proper to expect a scaler to cooperate with a company up to the point where Government interests are not slighted and where the scaler is required to put in only a reasonable day's work; beyond this, if special information is desired, they should be required to put on their own man to obtain it.

It is suggested that in all class C, D and E sales, that something along the following lines should be framed into contracts. The suggestions are not restricted purely to "gippo" logging.

1. Where the contract method of logging is used, the purchaser, if he desires a separate scale for each contractor, shall furnish his own scaler for such purpose. Also, under such method, the operation shall be sufficiently bunched to allow for the scaling to be handled by one man. If a portion of the

job is so far from camp as to require an additional Government scaler, such scaler will be put on only when the cut per week is sufficient, as for a separate operation, in accordance with the terms of the contract.

2. The camp foreman on all jobs is recognized as the purchaser's representative and, as such, is responsible for seeing that all contractors strictly observe the terms of the contract. The foreman will see to it that any employee or contractor who refuses to comply with the terms of the contract be removed from the job immediately.

Oak Timber Resources

By W. D. Sterrett, Washington

The following are some interesting statements and figures concerning oak timber resources and species in the eastern United States:

Oak comprises about one-third the total stand of hardwoods in the United States. The total estimated stand of oak, as given in the Capper report, is 157 billion board feet, including trees 8 inches and over in diameter. Seventy-four billion of this, it is estimated, is of the white oak group and 83 billion of the red oak group. Arkansas, Missouri, Tennessee, Kentucky, Louisiana, Mississippi, North Carolina, West Virginia, Virginia, Texas and Alabama, are the leading States in total stand of oak.

There are twenty species of commercial importance which compose the stand of eastern oaks, nine belonging to the white oak and eleven to the red oak group. There are 3 additional species of the red oak group which are of very slight commercial importance and several species which do not reach tree size.

The following is a helpful classification of the eastern oaks:

I. White oak group:
  a. Northern and interior white oaks (6 species)
  b. Coastal plain white oaks (3 species)

II. Red oak group:
  a. Northern and interior red oaks (6 species)
  b. Coastal plain red oaks (8 species)

The notthern and interior species have a general commercial range from New England and the Lake States to Alabama and Arkansas, and in some cases to Texas, while the coastal plain species occur chiefly in the Atlantic and Gulf coastal plain region from Delaware to Texas and northward to southern Illinois.

The common and botanical names of the species in the two groups and the comparative importance of each, as indicated by the approximate proportion of the total stand of saw timber in the group contained by each species, are given in the following tabulation:

White Oak Group

Northern and interior species	Approximate proportion of total stand in group Per cent
(1) White (Q. alba)	45 to 50
(2) Chestnut (Q. montana)	15 to 22
(3) Post (Q. stellata)	10 to 15
(4) Bur (Q. macrocarpa)	5 or less
(5) Chinquapin (Q. muehlenbergii)	5 or less
(6) Swamp white (Q. bicolor)	1 or less
Coastal plain species	
(7) Overcup (Q. lyrata)	5 to 10
(8) Swamp chestnut (Q. prinus)	5 to 10
(9) Live (Q. virginiana and Q. geminata)	1 or less

Red Oak Group

Northern and interior species	Approximate proportion of total stand in group
	Per cent
(1) Black (Q. velutina)	25 to 30
(2) Red (Q. borealis maxima)	12 to 15
(3) Scarlet (Q. coccinea)	5 to 10
(4) Black jack (Q. marilandica)	5 or less
(5) Pin (Q. palustris)	5 or less
(6) Shingle oak (Q. imbricaria)	1 or less
Coastal plain species	
(7) Southern red (Q. rubra)	10 to 15
(8) Water (Q. nigra)	5 to 10
(9) Willow (Q. phellos)	5 to 10
(10) Swamp red (Q. rubra pagodaefolia)	5 or less
(11) Spotted (Q. shumardii)	5 or less
(12) Laurel (Q. laurifolia and its forms)	5 or less
(13) Sand black jack (Q. catesbaei)	1 or less
(14) Upland willow or blue jack (Q. cinerea)	1 or less

Washington Notes

Forest Engineer Helge Sylven, who has been studying at the School of Forestry, University of Washington, Seattle, Wash., was a recent visitor to this office en route to his home at Trollhattan, Sweden. Mr. Sylven does not expect to return to this country, but will enter the Swedish Forest Service.

Assistant Forester Herbert A. Smith, Branch of Public Relations, left on February 25 for a western trip, which will take in all District Headquarters and the Madison Laboratory.

Fiscal Agent M. E. Fagan, while riding in an automobile with a friend recently was run down by a street car and severely shaken up but not seriously injured.

The Maine Legislature has passed a joint resolution favoring the establishment by the Government of a Forest Experiment Station on the White Mountain National Forest, New Hampshire. This resolution refers to the bills carrying an appropriation of $50,000, which were introduced in Congress a year ago by Senator Keyes and Representative Watson of New Hampshire.

American Society for the Prevention of Cruelty to Animals offers a prize of $500 for a humane trap for capturing fur-bearing animals. The competition is open to all.

Hearings on Water Power Regulations: On February 10 and 11, Executive Secretary Merrill of the Federal Power Commission held an open hearing on further regulations under the Federal Water Power Act of June 10, 1920. Mr. Norcross was present as a representative of the Forest Service. The proposed regulations covered the following:

General conditions affecting approval; Stipulations covering the planning, construction, operation and maintenance, reservation and classification of land as power sites; rental charges to cover reimbursement for administration and for use of public land and reservations; benefits from headwater improvements; depreciation reserves; expropriation of excessive profits; allocation of earnings; accounts and reports; amortization reserves.

A considerable number were present at the hearing representing the National Electric Light Association and many of the large power companies throughout the country. While some opposition was made to some of the Commission's proposals and many suggestions were filed, it was evident that an excellent feeling exists between the Power Commission and those interested in power development.

Flash--Bill carrying $240 Bonus signed by President Wilson.

Forest Products Laboratory

The ship Cyrus Wakefield once tied up to a California wharf which looked perfectly sound and trustworthy. During the night a rather strong offshore breeze sprang up, and the next morning the ship was sighted out in the bay towing after her a large part of the quay. When the shipping company's officials investigated the cause of the phenomenon, they found that the supposedly solid wooden piles on which the wharf was built were bored out, and the piles had snapped off like pipestems when the ship tugged at her hawsers. At another harbor a whole colony of houses built upon one of the wharves was dumped without warning into the water. Some time later seven freight cars which had been run out on a solid-looking pier quite as unexpectedly sank out of sight in the bay.

Such are the dangerous pranks played by that marine borer, the teredo. The teredo is a worm with a hard shell auger for a head. He is, in very fact, the worm that turns. He may bore any size of hole up to one inch in diameter. When he is young he bores a very small hole, thus gaining entrance into a pile unnoticed. Once inside, he grows rapidly and can so completely honeycomb the pile in a few months that it will not even support its own weight. It is sometimes possible to hear the sound of his bit when he is at work, but otherwise there is little outward sign of his presence.

Quite the opposite from the teredos in their method of attack are the marine borers called limnoria. Limnoria begin on the outside of the piling and in less than a year make it look like a half eaten stick of candy. When teredos and limnoria get to work on the same pile, it usually lasts about six months. Both of these marine borers infest the waters all along the Atlantic and Pacific coasts and are in reality a serious national menace.

The problem of guarding the structures on our thousands of miles of water front against demolition by teredos and limnoria has stimulated a great deal of American inventive genius. Hundreds of schemes have been tried, from the rigging up of floats which scrape the sides of the piles with the rising and falling of the tide, to the dynamiting of harbors to destroy all animal life in their depths. One scheme which aroused much hope involved the use of a pile built up of several planks and therefore full of cracks. The supposition was that the teredo would not cross a crack, but, although the teredo may have had scruples in this matter, it soon became evident that the limnoria did not. The limnoria found the cracks a shelter instead of a barrier.

The Forest Products Laboratory has recently proposed a plan for the study of the marine-borer problem covering the entire coastal waters of the United States. It has just completed the first unit of this program. If you visit a movie theater showing the International News Weekly, you may see what the Laboratory has been doing in cooperation with the American Wood Preservers' Association and District 5 of the Forest Service toward the protection of piling in San Francisco Bay. It is said that marine borers came into this bay clinging to the ships of the gold-rush days. At least the borers have been very active there ever since. In the last two years alone they have caused damage amounting to fifteen million dollars.

One of the facts brought out clearly in the recent piling survey is that of the diverse methods of protection that have been tried the most promising is that of treating the piles with creosote. Properly creosoted wood piles are very distasteful to both limnoria and teredos, and have remained unattacked for periods of 25 years, while neighboring untreated piles lasted from six months to two years.

District 1 - Northern District

Smelter Fumes Damage: A report from the Coeur d'Alene Forest indicates that there is every probability of serious damage resulting to the forest from fumes from the Bunker Hill and Sullivan smelter at Kellogg, Idaho.

An examination made in May 1920 showed that on the hills north of Kellogg many hundred mature yellow pine trees are injured, some of them already dead and others dying. This condition extends from the smelter east for several miles. How far this injury will extend and to what extent it will render the Coeur d'Alene Forest unproductive is difficult to say. The situation is being closely watched and reports made currently in order to prepare a well built foundation for damage claims if it should be found desirable to take such action.

When is Criticism Not Criticism: Reports, like plays, pictures and scenery, are often pronounced good or bad without sound reason or analysis. Constructive criticism is hard to get for the mere asking because it means work. An administrative officer may read a report with much gusto or dis-gusto, but to discover exactly what ails the report or the reviewer requires a special Ouija board. If a report is worth reviewing it should be taken to the mat so that we may find out which comes out on top, report or reviewer.

To my mind, the following are examples of makeshift criticisms: (1) "Your report contains much valuable information, but must be condensed and rewritten." (2) "Your report has been read and while I have not had time to consider it as carefully as I would like it strikes me to be needlessly long and not always to the point." (3) When the report is returned covered from beginning to end with innumerable pencil marks correcting sentence structure, diction and what not. This is an effort on the part of the reviewer to make his own brains work in another man's head.

If you are really anxious to produce a good report, you would be delighted to get some such criticism as the following: "I have taken much pleasure in reading your report on __________. It contains much useful information which should be published. Before doing this, however, I venture to suggest that you consider the following points. I think you will be able to both improve and strengthen it thereby: The purpose and scope of the investigation is not plainly stated; the introduction is needlessly long; you will awaken the reader's interest to a higher degree by a short, brisk and clear-cut introduction. You have a tendency to exhaust your reader's patience by attention to needless or insignificant details. This is particularly true in Chapter IV. Give more life to the whole thing by a more varied sentence and paragraph structure. I should say that you have altogether too many periodic sentences; your participles are too numerous and often too loosely attached. Put more emphasis on the significance and application of the information which you wish to convey.--J. A. Larsen.

The District Investigative Committee, which has been in session at Missoula reports good progress. The program for the ensuing year has been formulated and some of the recommended work for next year embraces more studies on logging costs, brush disposal, grazing, reforestation, permanent plots for growth and yield, Forest utilization, etc. One very interesting development in utilization may solve the long vexing larch butt problem. One commercial company claims to be able to extract alcohol and a form of sugar from larch butts. We foresee a brisk advance in larch stumpage from now on. The demand may develop to such an extent that the tendency may be to leave the larger portion of the tree on the ground and remove the larch butt. It may be necessary to fence all logged-over areas containing larch, and to tack U. S. Property notices on all butts and stumps.

Use Your Library: A record was kept, beginning January 19, of the number of those outside of the Service making use of the District library, and this record shows 14 during that month. For purposes of comparison a record of both Forest Service employees and students, or others using it, has been kept during February, and the numbers stand as follows:

Forest Service	Students and others
5	8

Axel E. F. Schard, whom many of us know, writes the following from Alaska: "Altogether I got four bears, five eagles, one porcupine, and half a dozen salmon, the biggest one weighing about fifty pounds--I shot him with my six-shooter. During the first day I got a great Grizzly after the most exciting fight. He started for me with my first shot, but I kept pumping lead into him. I shall never forget the sight, and my funny little sensations, when he came toward me, howling like mad, with jaws wide open and every hair standing up. My quills were also raised when my Winchester was empty, and I had nothing but my six-shooter for what looked like my last fight. But he dropped dead with a last howl,--and I could not roll a cigarette for ten minutes."

District 3 - Southwestern District

Speaking of Boundary Posting: "Supervisor Bruner's supposition that no National Forest boundary is as well marked as that of the Luquillo is no doubt correct. A conservative guess places the number of actual boundary corners on the Coronado, not counting section line intersections, at 5000. If we knew how much the Luquillo type of monument costs, we might be able to figure out how long it would take to mark our boundaries properly at the present rate of appropriations--all of which need not deter any Ranger from posting his boundaries in the old-fashioned way."--Coronado Bulletin.

Progress on Woodland Study: "Forest Ranger Fred H. Miller has completed the field work in connection with the woodland study which he has been conducting during the past six months and is in the office compiling the data collected, preparing his final report. As a result of the study conducted by Mr. Miller, we hope to be able to formulate a definite concrete policy for handling our future cordwood sales in the woodland type."--Tusayan News Letter.

Successful G-Trespass Case: "The grazing trespass case against G.W.& W.D. Parker was tried in the Federal Court on February 8 and 9. Judgment was rendered against the Parkers for $573.00 and costs. This case has been pending since 1919, when demand for settlement was first made."--Coronado Bulletin.

The 1921 Supervisors' Meeting: Five days crammed full of meetings, of talks, of discussions and arguments, and of learning the other fellow's viewpoint; a few social events and good fellowship affairs covering in lighter vein the job we are putting across; general agreement that it was the best Supervisors' Meeting so far held. Today saw a few visitors still in Albuquerque cleaning up allotments and individual conferences with the several offices, but a definite peace had succeeded the turmoil of the few days preceding. A few more weeks and the return of calls by the District Office men will start for the field season.

Among the outside visitors during the week were: District Forester Peck of Denver; Inspector Kelley and Inspector of Grazing Rachford from Washington. General administrative matters, fire and grazing appraisal as discussed by these men bringing in outside viewpoints, were among the leading subjects of the week.

The Poverty Dinner: Fifty-five men attended the final function of the Supervisors' meeting, the poverty dinner, given on Friday night at the Albuquerque Country Club. The affair was a climax--a big, fat exclamation point for a rattling good all-round week. When toast-master Mullen took the spotlight after the food had been disposed of, there began an hour of hilarity and a flow of pure wit that kept the bunch in an uproar. Among the number on the program were the presentation of many new and recently discovered facts, descriptive and geological, of the various Forests, the delivery of a few typical District Office night school lectures for the enlightenment of visiting officers, and the presentation to each Supervisor of a diploma for his course in the recent Supervisors' meeting. Degrees were also conferred in connection with the issuance of diplomas.

Pigs is Pigs--Otherwise Pork: "Ranger Rodriguez is contemplating the purchase of several pork barrels and the erection of a smokehouse. He says there is more than one way to relieve this district of a large herd of unpermitted and unclaimed hogs.--Santa Fe Bulletin.

Progress in Road and Trail Work in 1920: During the calendar year 1920 there was constructed in Arizona 141.4 miles of trails at a cost of $28,186.95 and 84.34 miles of roads at a cost of $457,892.81. In New Mexico there was constructed 209.1 miles of trails at a cost of $35,175.46 and 78.6 miles of roads at a cost of $340,375.33.

District 3 (Cont.)

Plenty of Labor: For the first time in over three years there is a surplus of labor for road and trail work and at a considerable reduction in price ov war times. The construction foreman of the Salt River-Pleasant Valley road is turning away men every day. Gila County has put into effect a new schedule of wages for road crews which represents a 20 per cent decrease under 1920 figures and is having no trouble to get plenty of labor at these prices.

Salt River - Pleasant Valley Road: Work on the last leg of the Salt River-Pleasant Valley Road on the Tonto is being pushed by the contractor and will be completed to Carr's ranch by midsummer. This stretch is 10 miles long and upon completion there will be an excellent road all the way from Globe to Reynolds Creek R. S., thereby opening up a very attractive part of the Sierra Ancha Mountains. A system of first class trails radiating from the end of this road into the cliff dwelling on Pueblo Canyon was completed last year and it is expected that a large number of people will visit the region this summer.

Alien Permittee Cases Revived: Following the recent decision of the Attorney General of the United States sustaining the validity of Regulation G-15 and sustaining the action of the department in excluding aliens from the use of the National Forest range in Arizona, the attorneys for the permittees concerned have presented to the Forester individual petitions setting forth the equities of each case. The former line of argument, attacking the right of the Secretary of Agriculture to formulate regulations such as G-15 which latter was sustained in the decision mentioned above, has been abandoned and this new approach made in the attempt to revoke the cancellation of permits.

Full Program at Night School: On the evening of February 10, the District Office night school had an extra long and full session to make up for a vacation granted by the "school" authorities on the preceding Tuesday evening. Three teachers occupied the chair during the evening, Mr. Marsh devoting the fore part of the session to yield tables, their formulation and use; Mr. Krauch following with a description of the sample plots work in this district, and Mr. Randles finishing off with a discussion of lumber grading and mill scale studies.

Official Recognition to the Stretcher Grade: "No. 5 Boards is the lowest recognized grade and admits all defects known in lumber, provided the piece is strong enough to hold together when carefully handled." Grading Rules, Western Pine Mfg. Assn.

When the above was read by D. O. night school instructor, a voice in the middle foreground ventured--"Please, Sir, I understand that on the Manzano they call this same material select and better."

District 4 - Intermountain District

The Alumni of District 4: This District has followed the lead of District 2 in attempting closer relations with former Service employees.

Of the 200 former employees to whom our circular letter of November 20 was addressed, over 100 replied. Almost unanimously, the replies express deep appreciation of the District Forester's letter, a real interest in our organization and its work, and a willingness to help put over the alumni project. Many of our correspondents were refreshingly frank, and no administrative officer reading this folder full of letters, in the proper spirit, could help but derive considerable benefit. The material is interesting, instructive, and in no small degree entertaining. One big thing brought out with especial force is the absolute necessity in our organization of more intimate acquaintance between those in authority all the way up the line and the men and women in the front line trenches. We must know our people and must develop by some means a closer and more sympathetic understanding of the individual, his or her situation, needs, aspirations, and daily life and work. We might well afford to dispense, perhaps, with some of the overhead now engaged in various lines, and divert the man-power saved to a systematic study of our personnel. A Personnel Officer in each District, bringing the proper qualifications to his work, would surely pay a profit in avoiding some of the administrative errors which result in needless loss of trained workers or underproduction on the part of many who stay.

Good Advice from a Range User: A prominent woolgrower who was unable to be present at the Supervisors' meeting writes as follows:

"I would have enjoyed meeting with the Supervisors and giving them some of my views on the handling of present day problems from a range user's standpoint. I believe that in this immediate neighborhood we are exceptionally well situated. And while my experience extends only to the Boise and Sawtooth Forests, I can easily see that where the range is not overcrowded it is an easy matter for the users and the forest officials to work in harmony. But where there is a shortage of range, discord easily creeps in. If I might give one word of advice to Supervisors, it would be to stand on their own feet, rule as they think they ought to, but rule. If the user is dissatisfied with the ruling, he can pass it up to the District Forester. Do not get in the habit of "passing the buck." In this day and time all business appreciates a man who will take responsibility, and while he can not always be right, the man who is never wrong is not doing anything.

"As time goes on the question of the usage of the forest for business purposes is more and more going to conflict with the usage for pleasure purposes. While not seeking to disparage the usage of the latter, the motto of "business before pleasure" should hold. We do not want to reach the stage which existed in the British Isles before the war, where pleasure before business was the rule, and great estates were held for sporting purposes only."

What a Habit! A fine of 25¢ was imposed upon all those men who were guilty of tardiness during the Supervisors' meeting. One would not realize the "immensity" of this item until the sum of $16.35 was seen. It is evident from the 35¢ that someone made a mistake in their small change--however, it is now too late to make an investigation.

Elk Conditions Investigated: Mr. Nowlin of the Biological Survey is now in Jackson Hole, and in cooperation with the Forest Service is making a thorough examination of the conditions under which the elk are wintering with especial reference as to numbers and whether or not they are using the areas upon which the grazing of domestic stock is limited.

Trafficking in Beaver Hides: Beaver hide matters occupied the attention of the local Justice Court to a considerable degree during the past month. As stated in our last month's news letter, it was decided by a Justice Court jury that Oral and Charles Bagley were entitled to legal possession of the 111 beaver hides which they shipped to this State from Nevada. Mr. Salisbury, a Deputy Game Warden from Boise, arrived in Montpelier early in January on an investigation of beaver hide matters. His activities resulted in the fining of six parties for trafficking in beaver hides, the fines amounting to a total of $260. Oral (Toots) Bagley donated $50.00 of this amount.--Caribou News Letter.

Excellent Spirit Displayed: When two messengers will work all night running the mimeograph machine in order to get caught up with their work, a great deal of credit is due them. Last night the two messengers of the District Office worked all night running stencils. They did this entirely of their own accord and are back on the job this morning. They ran 60 stencils during the night. This is what we call Forest Service spirit. If every employee of the Forest Service would take cognizance of this splendid example, it is certain that Forest Service work would receive its full measure of interest and attention.

How Many Kinds Have you Seen Lately? "There are five kinds of $1 bills, five kinds of $2 bills, six kinds of $5 bills, seven kinds of $10 bills, seven kinds of $20 bills, six kinds of $50 bills, six kinds of $100 bills, four kinds of $500 bills, five kinds of $1,000 bills, one kind of $5,000 bills, and two kinds of $10,000 bills, making a total of fifty-four different kinds of United States paper money now in circulation. We were looking over our loose change and unearthed this interesting information."--Philadelphia Ledger.

District 5 - California District

Study of Fire Prevention in Schools: Assembly Bill 769 has been introduced in the State Legislature of California providing for the compulsory teaching of fire prevention in the public schools. This is the same bill that has been introduced elsewhere and is supported by the National Association of Credit Men. The National Board of Fire Underwriters, the State Forester and various organizations are actively backing this bill and we feel confident that it will pass at the present session. The District Office has called this proposed legislation to the attention of most of the public bodies in the State and is receiving excellent assurances of support. Arrangements have been made with the local office of the National Board of Fire Underwriters to furnish items for the Underwriter's magazine monthly and that office will also cooperate with us in any educational fire prevention articles or exhibits that we may get out.

Paul J. Fair was the speaker at the District Office general meeting last Friday afternoon. His subject, "Exhibit Work," was ably handled and was illustrated with a number of lantern slides which made it doubly interesting. Paul is a master when it comes to preparing exhibit material, and his discourse was enjoyed by all who were fortunate enough to hear him.

Have You Ever Tried This One? The scheme has been followed by a number of Forests in the District of having their canteens which needed covering fixed up by children in the public schools. In at least one case the work was do free with all material supplied by the Service. The suggestion is made that the possibilities of this scheme be considered by all Supervisors who have not already contemplated this action.

Finger Prints! As evidence that our Law Enforcement training, and especially the "Finger Print Course," is receiving due recognition,read the following:

On January 9, the residence of Leslie Jones of Redding, Calif., was burglarized and in making their get-a-way the robbers shot the City Marshall. who later died of his wounds. Knowing that Forest Ranger F. H. Williams of the Shasta Forest was familiar with finger print work, the Assistant District Attorney asked him to try and get some finger prints at the scene of the robbery. Williams got two good prints from a crisco can which the Jones' family had used as a depository for their jewelry. He next got a good print from a pickle jar which the robbers had handled. Finger prints were also found on three 30-30 rifle shells the robbers had handled in pawing over a box of shells they found in the house. Another good print was found on a piece of paper one of the men had torn off and thrown away.

Photographic enlargements were then made of all the prints by an expert summoned from Sacramento. On January 11 two suspects were caught and their finger prints sent to the Sacramento expert for comparison with those secured by Ranger Williams, His verdict was "Prints correspond." In the meantime, however, the men confessed to the robbery and shooting, so the finger prints were not used, but would undoubtedly have convicted the men. Ranger Williams is to be congratulated on his good work.

An Exhibit, showing the work of the Forest Service, the extent of the National Forests, how they are administered and protected, and how intimately related the Forest Service is to the economic life of California and the nation will be opened to-day in Hilgard Hall by the United States Forest Service.

The Air Service of the army sent over from Crissy Field a Liberty M and wireless outfit which are the equipment for the forest fire patrol airplanes. This exhibit will be open to University students for the rest of this week, under the auspices of the Forestry division of the University. The exhibit is in charge of Paul J. Fair of the U. S. Forest Service, and Lieutenant Goldsboro of the 91st Squadron Air Service who, in the summer, is in charge of the forest fire patrol in Oregon.--The Daily Californian.

District 5 (Cont.)

Forest Service to the Rescue: The ammonia plant in an ice-cream factory in Sonora suddenly burst forth with an A No. 1 front line gas attack, driving all occupants of the place about 200 feet to the rear. They were powerless to advance. Help was needed and needed immediately, ere the entire population of Sonora should be asphyxiated.

The door of the Forest Service office burst open and a messenger from the besieged forces breathlessly related the news of disaster to the calm and collected Supervisor. Ranger Merrill and a gas mask were forthwith detailed to the scene and the day was saved.--Stanislaus.

Tanks Clear Fire Lines: A French paper "Le petit Monde"--states that tanks are being used in French forests to clear fire lines. The tanks are stripped of guns and armour and pull heavy plows to destroy all grass, heather, and other herbage.

District 7 - Eastern District

The American Bison Society has presented to the Government two additional buffalo from the Corbin herd to be placed on the Pisgah National Forest. The buffalo arrived in Asheville on Saturday in fine condition, and were transferred to the Game Preserve without trouble of any kind.

Supervisor Rush Puts One Over: Supervisor Rush is bound to have timber on his Forest and when the birds won't help him out he either plants it himself or induces someone else to do so. When you can induce an old hard-headed miner to plant forest trees you are going some, but this is what Rush did back in the year 1909 or 1910. A miner by the name of Mr. Robert Goodin, who was working a prospect on the Wichita National Forest came to Rush and told him that he would like to plow up a little piece of ground for a garden. Rush told him that he did not see how he could give him permission to do that unless he would agree to set out the land in cedar trees. This Mr. Goodin agreed to do. The young cedar trees were dug up from the surrounding hills and set out in the garden about 10 feet apart. The miner continued to use this piece of land for a garden until the cedar trees crowded him out. The best of them are now 15 to 20 feet in height and 3 to 4 inches in diameter. The miner has gone, but the cedars remain. They will soon bear seed and will doubtless serve as a center from which the seed will be distributed to the surrounding territory.--C. R. Tillotson.

Ranger Bill Says: *****

"It don't make no difference with which hand you do your work--Results is what counts."

"I ain't never figured out why the Govt. pays for transferrin' a tin 'Lizzie' but draws the line on your wife, says Forest Exam. C. A. Liper, recently come to this District."

"New ideas are great stuff if you've got enough fellers under you to work 'em up."

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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OUR NEW SECRETARY

Henry Cantwell Wallace, the Secretary of Agriculture, is an editor and publisher, practical farmer, former professor of dairying, and an extensive breeder of livestock. He is fifty-four years old and a native of Iowa.

Mr. Wallace's most notable achievement recently, and which probably brought him in closest touch with President Harding, was his authorship of the agricultural plank in the republican platform as it was adopted in the Chicago convention. He is also credited with furnishing Mr. Harding with considerable data which was used by the latter during his campaign speeches. Aside from being an editor of note and an instructor in the science of agriculture, Mr. Wallace is said to answer in every way the qualifications of a "dirt farmer."

He was born in Rock Island, Illinois, in 1866. His father, well known throughout the Middle West as "Uncle Henry," was one of the pioneers of that section, and was the founder of Wallace's Farmer, which is to-day one of the most successful and widely circulated farm journals in the Middle West. He spent his boyhood in Rock Island, attending the public schools, and after graduation from the high school entered the Iowa State College of Agriculture and Mechanical Arts at Ames, Iowa, in 1886. It was during his sophomore year there that he met May Broadhead, a freshman, whom he married later.

The first five years of Wallace's married life he spent on a farm in Adair County, and it was while thus engaged that the new agricultural head obtained his first-hand knowledge of the hard work and vicissitudes of farm life. At the end of these five years Mr. Wallace reentered the agricultural college, graduating in 1892. He then became an assistant professor of dairying at this institution, and later was promoted to professor.

Wallace's Farmer, of which Mr. Wallace is now editor, has its headquarters in Des Moines, and from a small farm paper, in the fifteen years Mr. Wallace has been its directing head, has grown in importance and circulation.

The new Secretary and Mrs. Wallace have a family of six children: Mrs. Angus Maclay, the married daughter; Miss Mary Wallace; Miss Ruth Wallace; and three boys, John B., Henry A., and James W. Wallace.

Diarists vs. Doers

By M. C. Page--Siskiyou

I have heard a lot of discussion regarding the rating of a man's efficiency by what is found in his dairy, and although I don't wish to give the impression that I have grown old in the Service and correspondingly wise, I have mixed 'round amongst HE-men quite a lot both in civilian life and in the Front Line Trenches and I would like to go on record as being plumb against judging a man by what he says about himself. I have seen men do startlingly brave and heroic deeds on the battle-front and then completely forget to mention, or even remember anything about it after their wounds had healed. I've seen those same men sit composedly and listen to the glowing description of hardships borne and perils braved by some self-made hero who had never been nearer the firing line than the "Battle of Paris." And, too, I have seen Forest Officers go out and accomplish more in a day than one can ordinarily hire done for a couple of yellow-backs and then when night came, after ten or twelve hours of regular man's work, sort of be at a loss to find anything of interest to put in their diaries. I've had ample opportunity to compare these with the fellow who will work all day in the shade of a medium-sized tree, sharpen his brush hook, which he has never dulled, many times, go countless times for a drink of water, and then hurry home half an hour early so as to be good and fresh for the arduous task of recording in his diary his great accomplishments for the day. When it comes to Diarists versus Doers the latter get all my Hurrahs.

Do You Typify Your Job?

By Fred Morrell

I traveled with a Supervisor--not one of the "newly rich" who had just come into his inheritance and was full of enthusiasm for the novelty and attraction of the new job. He wasn't jam full of new ideas for making the Forest and, perchance the whole Service, over like a new Supervisor so often is and always ought to be. He didn't accept, with the avidity of a baby reaching for its bottle, the pet schemes I had for making the world in general and the Forest Service in particular, better. He didn't turn them down right away, either, but just sort of shied off in a noncommittal way and apparently was taking his time to look them over--seemed to be sort of a hard-boiled customer who had had new ideas tried on him before and had tried some on others--had no convictions that new ideas were not good dope; in fact, he was for them all right, only he wanted to have a look at them before he issued any rain check. Not that he seemed to feel sure that he could tell their value by giving them a "once over," but that it was a part of his system. It seemed to be a sort of second nature to him, like it is for an old horse to smell the water in a strang trough before he drinks and who expects to drink all right, unless there is something very radically wrong, but he is never so thirsty that he doesn't proceed with caution.

And the reason for this as I figured it out is contained in my first sentence. The job is no novelty with him, and no new experience. He has been a Supervisor since "G.P." was in power. He knew the Use Book in all its glory and saw its decline from the Alpha and Omego of Forest Service instructions and policies till the time when it was "made over" for the Forest user, and the Forest officer came into possession of a brand new eight-cylinder "Manual," equipped with automatic revision arrangement so there can be, and usually is, something added every day except Sundays.

I have known this "Old Timer" for a long while, and it has been my custom when I thought up some new line of prattle to go out and try it on him. He represented to me one of the "Conservative Buyers." If he took it, I could sell it to the rest of the "Retail Trade"; and if it wasn't good for the ultimate consumer, and something he would fall for, Mr. Supervisor wouldn't want it. So it was always a good plan to test it out on him.

If a man should ask me "What is a supervisor?", I'd give him a letter of introduction to this old friend of mine and tell him to go see for himself. That's about the biggest compliment I could make for the Super. He fits his job--he typifies it. Most of us don't. We just rattle around in them. Which is the best? Assuredly, we need room to grow; but there is that in all of the jobs. The real test of whether we can grow rests in our ability to grow with the job; to grow and take it with us, rather than to expand a little under a lot of unnatural stimulation, such as the novelty or the urgency of a new job. The man who makes the big success is not he who holds the biggest job, but the one who typifies the one he holds, who comes to stand in the minds of those who know for what that job requires and what it is. Find such a man and you will find that his influence has traveled far; that he has been the inspiration and the strength of others. Our job isn't what others have made of it, but what we ourselves make of it.

New Mexico Goes in For Game Production

By Ward Shepard--Manzano

About eight years ago Miles W. Burford organized a game protective association at Silver City, N. Mex. In February 1921 the New Mexico Legislature passed a game commission bill that in many respects sets a new pace in game protection. The connection between the two events is direct, for in the intervening years the New Mexico Game Protective Association was organized and through several years of hard work and publicity built up the organization and the sentiment that made the commission bill possible.

The New Mexico Game Commission is an instrument for dealing speedily and effectively with game protection and above all with game production. Its powers are very broad. The commission is to determine the policies of game management; and its executive agent, the State Game Warden, is to put those policies into effect. It is empowered to create game refuges on any public lands in the State; to purchase lands for public shooting grounds; to establish rest grounds for waterfowl; to declare a closed season at any time or place on any species of game that has become unduly depleted; to close waters to fishing; to establish fish hatcheries; to propagate game, and to perform such other acts as the scope of the bill demands.

In its power of establishing refuges and local closed seasons, the Commission possesses the solution of our most serious problem in game management--the preservation of a breeding-stock. The implications of this power are unlimited. Given adequate law enforcement and a good public sentiment, the Game Commission has an unlimited chance to tackle the big problem of game production. The tide of hunters can be turned from the overhunted ranges near the more densely populated areas. Refuges can be established to insure the perpetuation of game where it is already abundant. In many areas where game is all but annihilated, closed seasons can be established. In fact, with the exception of certain species, such as mountain sheep and antelope, which are near the vanishing point, there are no game problems in New Mexico which can not be met by the powers of the Commission, properly applied and enforced.

The Commission is largely a regulative body, and there should be no real division of responsibility under this organization. The Legislature has, in effect, granted certain legislative functions to the Commission, just as Congress delegated broad powers to the Secretary of Agriculture in the protection of migratory birds. The Commission, in possessing these powers, can establish a flexible management, suited to the various species and the varying local conditions under which they live; whereas a Legislature, in spite of its great powers, is not fitted to deal with these ever-varying problems, for it is too slow and cumbrous and lacks the detailed information needed to practice scientific game management.

The New Mexico experiment should be watched by those who have lost faith in the old dogmas of bag-limits and short open seasons as an efficacious way to produce game.

Ranger Bill Says:

The wolf that's been threatenin' the Ranger Station was scared off by the "Flash" of the last Bulletin.

Jewel Dawn our Steno. says the Retirement Act or'to be extended to include office pipes.

In our job "E" don't only stand for Efficiency--it means Enthusiasm too.

"Top - o' - the - World"

"Top-o'-the-World!," said the Ranger, pointing to a nearby mountain peak. "Top-o'-Nothin'! Just an ordinary hill with a flossy name to attract tourists. Say, I wonder where the real top of the world is, and what it looks like?"

"Nothing much--kind of disappointing in fact. It's in the Himalayas in Asia; Mount Everest it's called. I'll tell you about it as we ride, if you like. I saw it once."

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Three days in Calcutta, India--and nothing to do, except to wait for a wire from the Conservator of Forests who was off in the rukh. I tried a cricket match, and went to sleep on the grass watching it.

In despair, I went to the Forest Service office. "What's worth seeing around here, besides temples?," I inquired of a lank individual copying letters in longhand. He looked at me nonplussed; then his face brightened.

"Ever seen the Himalayas? No! Well they are rather decent, you know. Three days for the trip. Take the night train for Darjeeling, and ********" But I was already on my way.

****

A night in the sleeper--hot it was too. Then breakfast on the boat as we crossed the Ganges; a change of trains, and we were off again with a roar and rattle. In the afternoon we quit the Pullman for a funny little railroad that took up the task of carrying us onward and upward. "Funny," is right. It was a "slim gauge" line with a miniature engine, and cars a foot off the ground, seating four people only, enclosed in canvas curtains. For awhile the "dinkey" pulled us; then a switch-back, and it took to pushing. Through rice paddies we went; past swarming villages, and then into the cool, moist tropical forest. Here a tea plantation of our friend Thomas L.; there a logging chance, with trees such as we love at home and dream about "west of Suez." Up! Up! Always up--'till the clouds closed down about us and made the silent woods a land of spectres.

****

Darjeeling! "A city set upon a hill," close to the border of Tibet--ever interesting, and one of the unique spots on the globe.

"Where do I get a 'gharri' for the hotel?" I inquired.

"Sahib, there are no roads here for carriages. You must either ride in the wheelbarrow or on a horse."

I walked. It wasn't far, and the experience of wandering through a city with only bridle paths for streets was worth something.

The hotel was clammy and damp. Around a flickering open fire huddled a few hardy sight-seeing souls--a big game Shikari, two Priests who had given their lives to educating these strange people, and a Memsahib--very English. Greetings of a formal nature were exchanged.

"Where do you see Mt. Everest?" I asked. "That's the top of the world, isn't it?"

"You can see it from Tiger Hill--seven miles by horse," answered one of the men.

"Well, I guess I'll see it tomorrow!"

"Really!" exclaimed the lady. "How extraordinary! I have been here three weeks and to the Hill five times and haven't seen it yet, you know,--all on account of the beastly fog."

"Better come along tomorrow. I've only got a day here and I'm going to see that mountain!"

****

Br-r-r-r! The air was cold next morning--or was it still night--I was too sleepy to notice.

We rode in the dark and mists those long miles, silently following the native guide. They were all there--the other folks. I knew they would be.

Here at last was the bungalow on top of Tiger Hill with a hot breakfast and steaming coffee waiting. We ate hastily. It was still dark.

****

Daybreak! "What is that dark, looming object across the great valley?"

"Patience, Sahib! You will see it soon. It is the Mother of mountains. No, Sahib, it is not Everest."

The first rays of the rising sun pierced the mists. "Oh!" I cried, "Oh! Tell me what mountain it is?"

"Top - o' - the - World" (Cont.)

"That," said the Father, reverently removing his cap, "that, my son, is Kinchinjunga--one of the highest peaks in the world, and the most beautiful."

I too took off my hat. There was something so infinitely sublime in that scene you just couldn't help it.

Five jagged peaks, after the Tibetan name for the mountain which means "a hand up-stretched," towering 28,225 feet above the frontier of that land of mystery. Capped with glittering ice and snow; untrodden by man or beast; scintillating in the first blush of the tropical day--it seemed the very gateway to Heaven.

****

"Look, Mt. Everest!" exclaimed the lady who had been gazing afar with the glasses.

There it was, clear in the morning light, but almost a hundred miles away--so far that it seemed even lower than the neighboring peaks. A rounded dome of everlasting white, unpretentious, disappointing perhaps, but nevertheless the highest mountain in the world--29,002 feet in altitude. No white man has ever approached within fifty miles of its base, for it lies in that almost unknown land of Tibet.

That is the real "Top-o'-the-World."

****

We rode home as silent as we came.

Even now I can close my eyes and see those mountains--endless, jagged snow-capped beacons of the Himalayas, the most glorious range in the world. And from the fancied scene stands forth that masterpiece of God's handiwork--Kinchinjunga.

And there also lingers in memory those farewell words of the English Memsahib: "Most extraordinary, the luck of you Americans!"--W. H.

Wage Scale in Camps of the Inland Empire

By Elers Koch--D-1

A general curtailment of cut in both sawmills and logging camps has brought about a large surplus of men following this class of work, and a general reduction in wages of from 20 to 50 per cent.

A schedule of wages to be paid workmen in both mill and woods work, drawn up by the Loyal Legion of Loggers and Lumbermen, governs all operators over Northern Idaho and Washington. This schedule provides a minimum of 42½ cents per hour, which rate, at the present time, includes not less than three-quarters of all the various woods occupations. In mill and yard work about one-half of the employees come under this rate.

During 1915 and 1916, though the minimum was somewhat lower than at present, a wider range in wages from the lowest to the highest existed. With a smaller percentage of employees working at the lowest rate, the average would probably be nearly the same as at present.

The following table gives some idea of the smaller present difference between the lowest and highest wages in some of the more common woods occupations, as compared with the winter of 1915-16, as well as a general comparison of wages and net earnings:

	1915-16 Based on 9-hr. day		1920-21 Based on 8-hr. day	
	Wages per day	Net earnings per day - Deducting 90¢ for board	Wages per day	Net earnings per day-Deducting $1.35 for board
Swampers	$2.50	$1.60	$3.40	$2.05
Landing men -	2.50	1.60	3.40	2.05
Sawyers-woods -	3.00	2.10	3.60	2.25
Teamsters -	$75 per mo. and board		3.40	2.05
Donkey Engineers	5.00	4.10	4.00	2.65
Hook tenders	6.00	5.10	4.64	3.31

Wage Scale in Camps of the Inland Empire (Cont.)

Wages in the camps operating over the eastern part of the timbered section of Montana, which are not affected by the 4-L organization, are considerably lower than over the western section and in Idaho. Here the pay is on a monthly basis, running from $35 to $65 per month and board, for ordinary woods work. This difference in wages is due largely to an independent labor market, created by repeated crop failures over the dry land of Eastern Montana, compelling the ranchers to seek outside employment for an existence.

Reasons advanced by the men who follow the woods as to why the present wages in the lumber industry have reached a relatively low mark as compared with other occupations requiring similar mental and physical ability, and which are admitted by them to be a result of their own methods, are:

(1) The gyppo system of contracting, whereby the output per man has been nearly doubled over the day basis, thus cutting down the total man days available for work, required to supply the market demands.

(2) Abnormally high wages paid during the last few years, due to scarcity of labor and continual demand for higher wages, which forced the cost of producing material now on hand to a level so high that lumber has nearly ceased to move from the mill yards, resulting in an over-stocking of both the manufactured product and logs.

Many of the concerns which have continued to operate through the winter have done so largely with the welfare of the community in mind, and in order to retain for their own good certain employees with long standing in the organization as a nucleus for future work. The result of this in the organization has been the sifting out of all but the most willing and highest type of men, with a much higher output per man than has been secured in years.

Found: A Trap for Forest Sites

Rumor is at fault as to the origin of the soubriquet "wood nymph" as applied to forest persons of the genus Research. A good guess is that this malediction fell upon one of our number seen flitting from glade to glade in the ardent pursuit of that elusive idea "forest sites."

"Forest sites," we all know, are with us always but, like Jim Girard's greasy cookee, they are so slippery that even an extra agile wood nymph will have trouble keeping eyes on them. Success, however, is at last about to shine upon us, according to some of our indefatigable site seers. We are assured that not only has the correct snare been devised, set, and baited, but the fowl is actually in the trap and all is set for the official yank that will place it in our hands.

The key to the mystery, we are told, is height-growth. Trees have a way of reflecting site qualities by the rate at which they grow in height—under rules and regulations authorized by Research. Once agree, therefore, on your scale of height growth--referenced for convenience to a single age, 50 or 100 years--and your trap is ready. Then measure the height of some aspiring, shade-despising trees on the particular land you are concerned about, determine their age, and, Presto! you have your site.

On what-you-are-going-to-do-with-it-now-you've-got-it hangs a long story. The bird seems to have a really remarkable series of accomplishments, most important of which is its clairvoyant power. It is, in fact, a medium, by which to rate your forest soils as to their growth capacity. For young growth of species for which there are yield tables, it contributes the power of seeing into the future. Putting these two things together you may, with a minimum of difficulty, classify all your lands as to their productive capacity in terms of whatever trees are dominant on them. Even in the cases in which someone has forgotten to furnish yield tables the height-growth key to site is "there with the goods" for classification purposes, although we may not yet be able to raise a large bet on the future yield.

Everything considered, site determination thus arrived at looks like a fair way to sneak up on the forest that we could not get at before because of "types." "Types" are Heinzlike in variety, and the worst of it is that they are the best little fighting words that have been introduced into our terminology. Here you have a short cut that leaves "types," not dead, but peacefully sleeping. Anyone who wants trouble can disturb their slumbers, but the Supervisor who wants to map his lands as to their relative growth values, and do it quickly, will do well to agitate for a height-growth classification of them!--E. F.

Washington Notes

National Forest Receipts for the seven months period July 1, 1920 to January 31, 1921, showed an increase of $32,393 over a like period in the previous fiscal year. Districts 1, 4, 6 and 8 are on the credit side of the ledger with increases of from $5,488 (D-8) to $48,241 (D-1) - all other Districts showing decreases of from $11,129 to $14,565. Total receipts for January 1921 were $90,159 less than for the corresponding month in 1920.

Off for the West: Col. Greeley and Assistant Foresters Headley and Carter left on March 11 for a swing around the "Big Circle;" Denver, Colorado, being their first objective.

"Joe" Falck of Ogden is in town again to help open the Annual Supply Bids.

R. S. Feagans--formerly Assistant to the Solicitor in D-4 and D-2, and now with Armour & Co., was in to renew old acquaintanceships last week.

Forest Products Laboratory

Door Dope: The fact that the top and bottom edges of a door are practically always left unfinished is largely responsible for their troublesome habit of swelling and shrinking. The exposed ends of the vertical stiles give the most bother, because wood picks up or gives off moisture more rapidly through surfaces cut across the grain than through those cut parallel to the grain.

If the doors in a house are to shut easily and fit tightly, it is important that their top and bottom edges be protected by paint or varnish. If it is necessary to refit the door after it is hung, the freshly exposed surface should be refinished at once.

Identification of Fungi: A book which helps one to tell the harmless from the injurious fungi attacking conifers or hardwoods has been written by C. J. Humphrey of the Forest Products Laboratory. It is well worth owning by anyone at all interested in the decay of wood. The facts are presented in an intelligible way and the book contains many helpful illustrations. A number of the principal fungi are shown in their natural colors, and a key is given to aid in their identification. The book is small and is bound in "croft" leather, so that it makes a serviceable handbook. The American Wood Preservers' Association published the book for the laboratory, and consequently it is not for free distribution. A copy of it may be procured, however, for $2 from the Secretary of the American Wood Preservers' Association, Box 375, Madison, Wis.

District 2 - Rocky Mountain District

Planting Record for 1920: A total of 2,735 acres was planted during the calendar year 1920. This is the largest acreage since 1914, although in the days of direct seeding the area annually reforested was much larger. The pleasing feature of the 1920 work is the assurance that we are practically certain of the success of the area now being reforested, while much of the large acreage that was seeded in former years is a failure. The acreage planted is the largest ever attained for the money available. This is due mainly to the increase in the Lake States' work where excellent results were secured at low figures.

Nursery Abandoned: Arrangements are being made to plant 40,000 Engelmann spruce transplants, which are available at the Cottonwood Nursery in Utah, on the Holy Cross Forest near Pando. These trees are some that were carried over in the nursery after it was decided to abandon further planting operations in District 4.

Planting on the Michigan: The approved planting acreage for the Michigan Forest for this fiscal year is 700 acres. 598 acres of this amount were planted last fall and there are sufficient Norway pine seedlings on hand to plant an additional 250 acres this spring. In last fall's planting, 2,250 trees were planted per man per day and the cost was $5.13 per acre.

Stock Situation Encouraging: Weather conditions during February have been most ideal for livestock men. Whether March will go out like a lion is yet to be determined, but it certainly came in like a lamb. The financial side of the situation is still very serious and stockmen in general are pretty blue. There has been a temporary flurry in the market, but most people do not have faith in its continuance. A remarkable situation is that the Forest applications are about as heavy as usual. It is uncertain whether the stock are actually on hand, but that won't be known until the time comes for putting them on the range. It is an encouraging situation if the stock are on hand and also encouraging if the stockmen expect to get them.

Game Refuges Gaining Favor: The Game Refuge idea is gaining favor all over the District. Both houses of the South Dakota Legislature have passed a bill favoring the Mt. Roosevelt Game Refuge covering the northern portion of the Hills. Several such bills are before the Colorado Legislature and those who are opposing such regulation are taking the position that the State will lose its jurisdiction, and livestock and other interests will be interfered with. We are trying to explain that it will not be the policy of the Service to take any action on the use of these areas because of the fact that they are refuges, any more than if they were not put into refuges. We are advocating refuges from the standpoint of breeding areas and it begins to look as though some of the bills will become laws.

District Office Meeting: The fifth meeting of the personnel of the District Office was held March 2. Assistant District Forester Hatton gave a fine talk on the work covered by the Office of Grazing, using colored lantern slides for illustrations. The motion picture reel "Grazing on the National Forests" was also shown.

District 3 - Southwestern District

Coronado Popular With Famous Men: "Leonard Wood, as a fire-lookout on the Santa Rita District is already well known to our readers. Comes now David Lloyd George, one of Leonard's new neighbors. Doubtless they have lively discussions about "Who won the War."--Coronado Bulletin.

Frontier Days Re-staged on Datil: "During the first part of February, Juan Amestoy, a sheepman and permittee on the Magdalena District, states that while riding in Ryan Hill Canyon, he was shot at three times by unknown parties. On going back next day to investigate, he found 18 heads where this number of sheep had been butchered. Three Mexicans who were building a fence for another permittee in that vicinity, were arrested, but later turned loose for lack of evidence."--Datil Bulletin.

Lincoln Starts the Ball Rolling: "And still we have no moisture, and the windy days continue. The result has been brought home to us by two fire reports received during the past week--one covering approximately 25 acres on the Mayhill District, the other on the White Mountain District. Ranger Brubaker reports that a number of women living in the vicinity of the fire rendered valuable assistance in furnishing supplies to the fire fighters."--Lincoln Weekly Bulletin.

Ramsay is Hard on Lions: "One of Ranger Oldham's permittees on the Walnut Creek District, R. W. Ainsworth, on one of his recent visits to this office, reported the loss of 32 sheep in one night from the depredations of one mountain lion. This lion was caught the next day by Trapper Ramsay Patterson.

"Ranger Taliaferro also reported that Patterson caught three lions on the Crown King District during the month of January."--Prescott Bulletin.

He Just Couldn't Tell a Lie: Supervisor Shepard, while trying to take a holiday on Washington's birthday, captured a late duck-hunter at Bernalillo. The evidence was exactly as indisputable as that in the well-known cherry-tree episode, as the offender was apprehended on the point of retrieving a bird after a very good wing shot.

The party occurred before the Justice of the Peace at Albuquerque on the 24th, when the defendant, A. C. Becker, of Albuquerque, was fined $25 and costs.

How is Your Fire Fighting Eq [illegible] ng is quoted from an inspection report made by Mr. Char [illegible] District of the Cleveland: "The District has equipment for 300 fire fighters which is ample and that equipment was in the best condition of any I ever saw. All painted, sharpened, stored neatly under shelter and stenciled." How many other Rangers would draw the same excellent comment from an inspector on this question?

District 6 - North Pacific District

Some Scaler: According to word received recently from the Portland Office, Scaler Frank W. Mattson, of the Whitman, scaled more timber than any other man in District 6 during the year just closed. The number of logs scaled by Mattson was 63,000, and totaled approximately 12 million board feet.

Tourists' Dollars: Herbert Cuthbert, Secretary of the Pacific Northwest Tourest Association, estimates that $45,000,000 was expended by tourists through the Pacific Northwest in 1920. A check of automobile traffic in Portland showed that five times as many autos from outside the State passed through in 1920 as in 1919.

Good Publicity: Deputy Supervisor Campbell of the Washington had a well-written article in the "Show Window," an elaborate publication of the Bellingham Chamber of Commerce. The article is illustrated with 16 very attractive photos of Forest scenes illustrating the story which is called "In a Forest Ranger's Workshop."

Bones: The mysterious forty-four bones unearthed sixty feet below the summit of Mount Hood by lookout man G. C. Marony, of the Oregon, in 1919, have just been turned over to the Oregon Historical Society, which will put them on display in their headquarters at the Portland Auditorium. These bones were at one time the personal property of some large animal, probably an elk or moose. How such a beast crossed the glaciers and qualified as a Mazama by reaching the summit of Mount Hood is a puzzle which the scientists whose attention has been called to the find have been unable to solve.--A. G. J.

Alaska Pulp a Reality: January 24, 1921, is apt to prove an epic date in Alaska's development. For on that day there was shipped from the Alaska Pulp and Paper Co's. plant on the Tongass Forest the first pulp ever manufactured in Alaska! It is believed to mark the beginning of the development of Alaska's forest resources. The pulp was manufactured at the Speel River plant and was shipped to San Francisco, where it will be made into paper. This Company was awarded a Forest sale of 100 million feet and began work on their power plant in June, 1920, and began to turn out pulp in January at their small plant on Shrimp Bay.

Rustlers: What we need on the Deschutes is a "Nick Carter" to catch the cattle rustlers. On the Sisters-Metolius Cattle and Horse Range 150 head of cattle were stolen out of a total permitted number of 3,700. On Crane Prairie out of about 1,600 there are 47 missing, mostly 2-year-olds.

Apparently the art of rustling is also being made efficient, as these nimble gentry are using a truck, a tripod made of 2x4s, a small block and tackle, and a small bore rifle. The method as nearly as can be determined is to spot a good-looking yearling or two-year-old, drive by him after night, pot him with the rifle, pull him into the truck by means of the tripod block and tackle and chug away to a secluded spot where there will be no interruptions during the butchering process.--F. V. H.

District 7 - Eastern District

It Pays to Advertise: In reference to the recent Service newspaper item concerning the gift of a buffalo bull from the surplus herd of the Wichita Game Preserve, the following letter has just been received:

"Dear Sir: I saw your advertisement in the paper to get a little Buffalo so I am writing immediately so as not to waste time. I have a very big yard and keep all kinds of animals, so I would like to have a Buffalo among my collection. I am 15 years old and would take the best of care of it. I am inclosing a two-cent stamp for return postage, if necessary." Respectively,

(Miss) Hazel Haines

(over)

Please send me if you have one, a small one so I dont have to be afraid of it.

District 3 (Cont.)

Harley, the Colt: "On January 4 Robert Munro from the Datil arrived to assume the duties of Deputy Forest Supervisor and brought with him his trustworthy steed, "Harley, the Colt.' His means of transportation made it possible for him to visit several of the ranger stations prior to his three weeks' general inspection of the Bloody Basin and Cave Creek districts. Mr. Munro reports a disastrous range condition on the desert surrounding the forest boundary, and that some of the sheepmen are making efforts to save their sheep by feeding corn and cottonseed cake."--Prescott Bulletin.

Articles on Doves: A very interesting article entitled "A Hunter's Notes on Doves in the Rio Grande Valley" by Aldo Leopold appeared in the January-February number of "The Condor" a magazine of western ornithology published at Berkeley, California.

Moral: Every Little Fire Has a Kick: "Ranger Brubaker reports that one of the farmers on Little Creek while engaged in cleaning up and burning weeds near his oat stacks allowed the fire to get away resulting in a loss of 40,00 lbs. of oats. He was heard to remark immediately after: 'No more fires for me--they're too destructive.'"--Lincoln Weekly Bulletin.

It Might be Worse: "Supervisor Arthur and Deputy Supervisor Kartchner returned the first of the week from Albuquerque with glowing accounts of the Supervisors' meeting. Many topics of interest were discussed but the principal discussion seems to have hinged on how to run the Forest Service on a deficit of approximately $30,000 for the next fiscal year. All our fond dreams of a full purse for 1922 have therefore vanished."--Lincoln Weekly Bulletin.

Forest Fire Insurance: "It is reported that the Southwest Company has about closed with the United States Fidelity and Guaranty Company for fire insurance on the logs cut by the old Sacramento Mountain Lumber Company in the head of Benson Canyon. Negotiations are also underway for insurance on standing timber. Obviously the Company realizes the fire danger in the locality is worthy of consideration."--Lincoln Weekly Bulletin.

District 5 - California District

Air Service: Messrs. Wilfong, Townsend, Brown and Devan of D-1 and Cleator Chartrand and Gruver of D-6 called at the office February 14, and left that evening for their home stations. These men had been attending the Liaison Officers' conference at Mather Field which closed February 11.

This conference covered a period of four weeks training for air patrol work with intensive training of both Forest officers and a class of enlisted men who will probably be assigned as observers this summer.

Districts 1, 5 and 6 were represented at the conference. The average daily attendance of Forest Service men was 16. The Forest Service men took the complete course covering the work of a liaison officer which included instruction in the use of the radio, aerial observation, etc.

T. D. Woodbury has left the hospital and again taken up his old quarters at the Baldwin Hotel. It is reported that "Wood" has been taking an intensive course in "Crutchology" and graduated with honors, having made several blocks per hour on his final trial trip.

Klamath Grazing Lands will be given a chance to come back. Heavy grazing combined with a series of dry seasons has reduced the carrying capacity of most of the Klamath ranges, and to enable the range to improve by making possible a greater seed crop the Secretary has reduced the maximum number of stock which may be grazed on the forest lands approximately as follows: Cattle and Horses 5 per cent; Swine 20 per cent; and Sheep and Goats 50 per cent.

It is believed that this will still allow ample grazing area for stockmen who have been using the range regularly, but will not permit much new stock to come onto the range.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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"YES-ING THE BOSS"

Disagreeing with the boss does not constitute a kicker. Most employees knuckle down and agree with everything the boss says. They follow the line of least resistance, and seem to bask in the sun of that great indoor sport--agreeing with him in everything that he suggests or proposes.

This "yes-ing the boss,"--for this is is exactly what it means--is divided into two classes.

The first is the nut-brained individual who never had and never will have an original idea. He always says: "Yes," and our Mary's little lamb has nothing on him, as he is its progenitor. There being routine work in every organization, and he being able to do it, he is considered a more or less necessary evil.

The second is the fellow who really has good ideas of his own, but is so lacking in courage that he does not dare to state them. While he knows his own idea is better--as he is more accustomed to handling that work--his spine fails to work, and water instead of blood runs through his veins. He says "yes." He is afraid the boss would not like his suggesting anything else and might lose his good will.

There are, however, two classes of men who don't always say "yes."

The first is the pin-head who is so small as not to see the value in any kind of suggestion, except his own. He will spend much time arguing over trifles, and every miserable little thing that he can find. Pin-head stays around because the boss knows he has ideas and hopes that some day the narrow mind will broaden out.

Then there is the fellow who has his own ideas, and is not afraid to speak and mention them, but is broad enough to admit that the other's plans are better. Taking the standard of what is best for the business and for all concerned, regardless of who suggested it, he accepts gladly his share of carrying the load.

For goodness sake suggest a plan or an idea if you have one. You are paid and expected to improve your work, to study it, and no matter how unimportant your job may be, stick to this principle. The boss wants your ideas. If you find someone else offers a better idea, get behind it and be broad enough to accept it.

If you fail to suggest you can not be of practical help to the boss. Always agreeing with him won't help him. You are not preparing for a better job and larger responsibilities if you are passing your business years always kow-towing to the opinions of the boss.--J.H.P. in Canada Lumberman.

Minimum Silvicultural Requirements

The Forester has recently sent to all State Foresters and forest schools the following letter regarding the determination of minimum silvicultural and protection requirements for keeping forest lands continuously productive. The project has been assigned to the Branch of Research, which will conduct the work in cooperation with Forest Management. Detailed plans and assignments are now under preparation:

"For some time many foresters have been considering the advisability of determining the minimum silvicultural and protection requirements essential for keeping forest lands in each region in continuous production.

"Requirements of this character will be essential before any form of public regulation of forest lands can be put into effect, regardless of the particular plan which may be adopted. Efforts to arouse public opinion on the need for forestry will be materially aided by putting the essential minimum requirements in concrete form. It will give the whole forestry movement more definite objectives and clear up much speculation and conjecture. It should aid the crystallization of public opinion in favor of public regulation, and at the same time will undoubtedly bring into the open opposition to public regulation which is now able to conceal itself in generalities. I believe that from all standpoints it will be desirable to have this data in specific form at as early a date as possible.

"I have practically reached the conclusion that the Forest Service should not await specific legislation in order to initiate this work. But the job can not be done effectively without the cooperation of the foresters and forest schools in each portion of the country. I would like to enlist such cooperation during the coming year in determining for each broad set of conditions the minimum requirements in fire protection, methods of cutting, slash disposal, and other practicable measures necessary to keep forest lands productive. I have in mind the compilation, weighing, and checking in the field of knowledge already available rather than the initiation of special research. The recommendations when completed must be in simple, concise, understandable form and should include specific suggestions on legislation required to put them into effect. The publication of results might either be by regions or by States. It would be my hope to see much of this work completed during the next year.

"TO be most effective, this project should be carried out in cooperation primarily with the State Foresters and forest schools. The progress that can be made and possibly even the order in which the work can be undertaken will, because of the limited resources available to the Forest Service, have to depend in no small degree upon the cooperation that may be secured. Many of the State organizations have already made a great deal of progress along the lines proposed and the forest schools have secured information of the greatest value. Doing the work cooperatively, furthermore, should make for unanimity of judgment among foresters on the essentials and for more solid support of the conclusions.

"I would appreciate greatly your suggestions regarding the advisability and details of this plan, and, if you believe the time is ripe for undertaking such work, the extent to which you would be able to cooperate."

Late News of the Great Olympic Blowdown

"According to George C. Joy, chief fire warden of the Washington Forest Fire Association, the quantity of fallen timber will aggregate between four and five billion feet. He bases his conclusion on the fact that in thirteen townships in the worst of the storm belt the down timber amounts to a trifle more than 25 per cent, making a total for the thirteen townships alone of 3,200,000,000 feet. The balance of his estimate includes timber outside of the thirteen townships. Standing timber in the Olympics prior to the storm ran about 30,000,000 feet to the section. In making a report to the trustees of the association, after a personal investigation, Mr. Joy said that the reports in the press of the damage done in the area extending from about ten miles west of Lake Crescent to Mora are not exaggerated. In this district, Mr. Joy and State Land Cruiser A. K. Wade said that in a strip comprising 140 acres in a heavy fir belt along the Soleduck valley, he counted the trees of various species standing and down. There were 1,962 standing fir trees, and 655 down, or a little over 25 per cent of the fir down. Spruce showed more than 17.6 per cent down and hemlock 37 per cent. The amount of timber on this strip, conservatively estimated, would be around 100,000 feet per acre, a little over 25 per cent of which is down. This land is in the heart of the forest on level ground and fairly well sheltered.

Late News of the Great Olympic Blowdown (Cont.)

"A hurried investigation of the hemlock and spruce area west and south of the fir belt showed that the loss in these two species of timber is considerably greater than in the fir, fully 75 per cent of the timber being down in places where the wind was violent.

"Western Clallam and Jefferson counties along the Soleduck and Bogachiel valleys seem to have been the hardest hit. Reports from a part of that district are that considerable timber was blown down, but it is not as serious as the loss farther south. The severity of the storm reached to the Hoh River.

"The reports from Grays Harbor County as far north as Quinault Lake were as alarming as those from the Hoh district. From Humptulips north a large part of the timber was blown down, but most of this was exposed to the wind, adjoining timber that had been logged. The damage did not extend into the timber to any great extent, though there were many trees felled in the solid areas.

"The storm was not as severe in the Quinault Lake district. Only the exposed points appear to have been affected. South of Grays Harbor and in Pacific County, little damage seems to have been done by the wind.

"From their own observations, as well as from information gathered from others, Messrs. Joy and Wade think the timber loss will be found to be considerably less than was at first estimated. The exact extent of the loss, however, can not be stated until the ground has been gone over by timber cruisers."-American Lumberman.

A Word About Roots

By C. G. Bates--Fremont Experiment Station

Several of the western Forest Experiment Station men have for some time been trying to discover what conditions of environment are favorable to young trees and have the greatest influence on the composition of the forest stand--or, perhaps, what conditions favor one species more than another. I have begun to suspect that we can not wholly solve these problems without more study of the characteristics of the trees themselves, than we have so far given. Grant, for example, that drought is most often the cause of death, does yellow pine succeed where spruce fails just because the pine is "tougher," through long existence in a "tough" environment, or because the pine in some way is able to obtain moisture which is not available to the spruce.

Along this line of comparing the species in various ways, a good deal has lately been done at the Fremont Experiment Station, but I desire merely to call attention here to a very simple experiment on root development. The need for this was called to attention a year ago when Roeser was tallying the young reproduction in a Douglas fir-Engelmann spruce stand. He found that among the seedlings less than a year old, those of the fir had roots about twice as long as seedlings of the spruce, and the spruce seedlings were dying off at a much more rapid rate. In this case, as in many others, the spruce roots were simply not long enough to reach through the litter, which in June had become very dry.

Seeds of four species were sown simultaneously in a tray of sand about 3½ inches deep, which was kept well watered. Germination began in about two days. At the end of 30 days the seedlings were carefully removed without breaking the roots, and the following average root lengths were found:

Yellow pine	2.79 inches
Douglas fir	2.55 "
Engelmann spruce . .	1.47 "
Lodgepole	1.25 "

Now the low average for lodgepole is due partly to the fact that this species is slower than the others in germinating, so that the seedlings were appreciably younger. But the best of the lodgepole measured had only 1.7 inches of root. A great number of tests have shown that this species succumbs to drought more quickly than any of the others, while spruce also succumbs quickly if the surface of the soil dries rapidly (as in nature), but stands just as much drought as fir and yellow pine if the soil dries evenly.

This test, of course, is only a suggestion of what ought to be done. Toumey has accumulated a large amount of data on tree roots, as yet unpublished, while Weaver has examined the roots of many plants of mountain and plain, but few, if any, in the seedling stage. But this simple test shows that in deciding what factor is most important to success of seedlings, and particularly in comparing two or more species on the same site, we ought to know very clearly what root extent the seedlings have before we can see even how the moisture supply should be measured. What moisture supply are we talking about? Evidently not that at a depth of a foot. And when we have found out why lodgepole and spruce are so absurdly indifferent to their own welfare, we shall have a neat explanation of their distribution.

Succeeds in Taming Partridge

At the recent annual meeting of the Michigan Sportsman's Association Deputy Game Warden Peterson gave an interesting account of his visit to the farm of a Mr. King on Birch Lake in Cheboygan County, whom he heard had succeeded in taming partridge or ruffled grouse. King informed him that he fed his partridge every evening and that the birds would appear at six o'clock or perhaps five minutes before that time. Mr. King secured corn and buckwheat and went to a point near one of the farm buildings, where he gave his call and the air seemed immediately to be filled with birds coming from the woods, from off the barn and from the fields. They came immediately to their feet and showed no fear of Peterson, who counted 52 birds in all.

Mr. King had names for several of the birds, appearing to be able to pick them out from their coloring or actions, one particularly coming and eating from his hand. A snowshoe rabbit also joined the group and ran around among the partridge; as well as two bluejays and several red squirrels. The partridge appeared to slightly fear the red squirrels, perhaps because of their reported robbing of nests. After feeding the birds King requested Peterson to remain with them while he stepped inside a building nearby, but as soon as he had left, the entire flock rose with a roar and flutter and disappeared into the timber.

The State Game Department is attempting to secure moving pictures of these birds, but it is doubtful if this can be done, as the light is rather poor at the time the birds come in for feeding.--Hilton, Michigan.

What's In A Name?

By Will C. Barnes

Two rather interesting questions have been up recently before the National Geographic Board for solution in which Forest officers will be interested.

The first revives the well-known contention between the cities of Seattle and Tacoma as to the name of Mt. Rainier. Several years ago the Board heard both sides of this question and after giving the matter full consideration decided in favor of retaining the name Rainier even though it perpetuated the name of a British admiral who never saw the mountain nor, as far as can be learned, was ever in the waters of the Pacific Ocean. This decision was apparently accepted by Tacoma in good faith and the matter was closed supposedly. Recently, however, representatives of the Grand Army of the Republic have started an agitation in Seattle and elsewhere on the Coast for having the mountain renamed in honor of Abraham Lincoln. The proponents of this name seem to believe that by christening the mountain anew the old-time feeling between Seattle and Tacoma will be cured. The arguments which the Board heard at its last meeting, however, indicate that it is an apple of discord which bids fair to revive the whole discussion.

At the meeting mentioned representatives of Seattle, Tacoma, and the G.A.R. were present in numbers, and the discussion developed into a lively and interesting scrap between the three factions. The Board was importuned by business interests of Tacoma to make no decision until they could send further representatives to present their side of the case to the Board, with the apparent idea that the whole matter was to be reopened and perhaps in the final analysis their contention for "Tacoma" might yet be granted. The Board naturally agreed to postpone decision until its next meeting in May.

In discussing this matter the Board pointed out to the advocates of the name "Lincoln" that there were already no less than six mountains in the United States named Lincoln, besides numberless towns, cities, and counties, and that so far as perpetuating the name of Lincoln was concerned the change in the name of the mountain now known as Rainier does not seem necessary. This, however, did not satisfy the old soldiers, one of whom declared that in his opinion if there was a mountain and a county in every State, and a city named Lincoln in every county it would be all the better.

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The other discussion originated over a desire on the part of the citizens of Colorado to change the name of the Grand River in that State to Colorado. The argument is based upon the peculiar nature of the nomenclature of the rivers that form the Colorado. Every boy or girl who has studied geography learns that "the Colorado is formed in southern Utah by the junction of the Green and Grand rivers." The Colorado people believe, however, that if the men who named the Colorado River from the junction down had realized what they were doing they would have included the very headwaters of that stream in the name, and the Colorado enthusiasts claim that the Grand River is the logical extension of the Colorado.

The bill which was introduced in Congress by Congressman Taylor of Colorado proposed to change the name of Grand River from its junction with the Colorado to its source under the continental divide in the Arapaho National Forest, so that from the Gulf of California to the Continental Divide the river would be known as the Colorado. He states that Colorado people consider the Grand to be the father and the Green the mother of the Colorado River, and hence the child should assume the paternal name.

The Geographic Board looked the matter up very carefully and reported to Congress that if any change was made the name Colorado should be given to the Green rather than the Grand River fork. Documentary evidence was furnished to show that as far back as 1811 the Green River was called the Colorado (Chittenden's History of the Fur Trade, Vol. 2, p. 779; Missouri Gazette, May 15, 1813; Ashley's "Narrative", 1825; Bonneville map, 1837; and Fremont narrative, 1843). In some way, however, the name was finally changed to Green, and Green it has remained ever since. History does not show that the Grand has ever been called the Colorado. Based on historical usage, therefore, the Board decided that the Green River was the real continuation of the Colorado. Moreover, the Green is almost exactly twice as long as the Grand (Green, 700 miles; Grand, 423) and has a much larger drainage area, but does not carry quite the amount of water the Grand does. The Board made no recommendation to Congress in the matter, merely submitting these facts as they found them. The bill naturally died in the last Congress, but it is understood it will be reintroduced in the next session and probably some definite decision arrived at.

Only once in the history of the country has Congress changed the name of an interstate stream, which was in the year 1852 in the case of the St. Peter's River in Minnesota, which was changed by an act of Congress to the Minnesota River.

A Protest Against Our Handwriting

By Chas. A. Kolb

The Clerk in the Washington Office whose duty it is to transcribe the descriptions from the photographic notebooks is of the opinion that owing to t the nature of much of the handwriting she has a kick coming--although she does not approve the use of so unladylike an expression. Seriously, there is no excuse, since the passage of the Volstead Act, for the quality of much of our handwriting. One instance might be cited to show how the work is hampered and made costly by our carelessness in this matter. It is not claimed that so much effort is always given in similar cases but we all know that with conscientious clerks the tendency is to make every endeavor to decipher obscure handwriting rather than return it to the author.

The case in question was a cattle picture and the Clerk, after an exhaustive effort to decipher the description referred it to her Chief. He took out his Sherlock Holmes reading-glass and after losing patience passed the buck to an administrative assistant, as is the habit with Chiefs. The administrative assistant took it with a confident air, but he soon turned it over,

A Protest Against Our Handwriting (Cont.)

as is the habit with administrative assistants, somewhat crestfallen, to the office stenographer. Office stenographers are, necessarily, bright but after some minutes of close application this one said something improper and solicited the services of a drafts-lady who is so "sparkling" that at times some of the draftsmen have to wear smoked glasses. She also tried in vain and declared that the Author had sent in his Chinese laundry ticket by mistake.

Then the whole group had an inspiration. It was a cattle picture and Grazing knows all about cattle. The hieroglyphics were taken to that Branch. Grazing grew indignant and seemed to think that it was enough to give one the "cattelepsy." So the notebook went back to the Author.

We should all take this matter seriously and if we have been unable to learn how to write, let us either have our descriptions typewritten, or if that is not practicable, then get our little six-year-old son to write our notes--the Clerks will prefer his handwriting.

Ranger Bill Says:

Some of the circular letters are gettin' so interlectural I can't understand 'em.

I've noticed that a lot of mighty independent Rangers always wipe their feet before openin' the door.

Every time I hear tell of a politician criticizin' the Service I kinder feel we was gettin' a bit more efficiency into our business.

Washington Notes

Others Follow: France, as well as Canada and the United States, has come to a realization of the advertising value of Post Office cancellation die slogans, as indicated by recent letters received from Paris. While the Service does not claim to be the originator of this idea, first started in D-2, it is nevertheless a fact that through our wide use of fire and recreation dies, and the results obtained therefrom, the advantages of this form of publicity have been strongly impressed on Government officials--so much so in fact that the Post Office Department has ordered our dies withdrawn from use and replaced them with slogans of their own.

Visitors: Anthur Bowling Johnson, Editor, Lumber World Review; Dr. Wilson Compton, Secretary, National Lumber Manufacturing Association; and F. E. Olmsted, Forester, San Jose, California, were callers at Service headquarters on March 10.

Some Bird: Henry Hall, formerly of the Steamboat Springs Ski Club, Colorado, and known to many Forest officers, broke the world record for professionals at Revelstoke, British Columbia, on February 10, when he jumped 229 feet at the annual ski tournament. The previous mark was 212 ft. 9 in. made by Anders Haugen at Dillon, Colorado.

Reclassification: In a discussion on the floor of the Senate, March 3, on a motion of the Senator (Sterling) for South Dakota to relieve the Appropriations Committee of the consideration of Senate bill (4106) for the classification of civil-service employees, Senator Smoot (Utah), a member of the Committee, made the following statement:

"I will say to the Senator from South Dakota that not only have the members of the Appropriations Committee gone into all of these details, every bureau of the Government and every department in detail, but there is no question but that at the next session of Congress in the very opening days a bill will be drawn and introduced covering the question in full.

"The chairman of the Appropriations Committee said upon the floor of the Senate, when the legislative appropriation bill was before this body, that never again would he vote for a bonus; and, as a member of that committee, I made the same statement, and I mean it. Mr. President, there is no question but that the Appropriations Committee will take up this question and follow it to a conclusion, and that when the appropriations are made for next year they will be made upon the basis of the salaries as contained in the bills reported to Congress, the different classifications, and the amounts to be paid the different employees of our Government."

Have You Read It? Professor John Ise's "The United States Forest Policy," Yale University Press, 1920. This is a book which contains a vast amount of valuable information for all Forest officers interested in the development of conservation in the United States.

How to Ship Negatives: When you borrow a lot of fine photographic negatives from some friend outside the Service and forward them to Washington for reproduction, be sure to: 1. Send them in a poorly done-up package by ordinary mail, since the chances of losing them in this manner are much better than when they are registered. 2. If you are shipping glass plates, wrap them securely in cardboard. Glass being flexible travels well that way, and the jingle at the receiving end saves the clerk from cutting his hand. 3. Also, send in a letter with your requisition telling PR not to lose or damage the negatives. This always adds zest to the day's work.

Reorganization: The bill for the reorganization of the Government Departments, written by Senator Medill McCormick (Ill.) will, it is stated, become the basis for the administration reorganization plans.

This bill as it stands abolishes the Interior Department and creates in its stead two new Departments, one to be known as the "Department of Public Works" and the other as the "Department of Social Welfare."

The various services that would be included in the Department of Public Works are: From the Department of the Interior, the general land office, geological survey, bureau of mines, reclamation service, national park service, division of Capitol buildings and grounds and Alaskan engineering commission; from the Department of the Treasury, the office of the supervising architect; from the Department of Agriculture, the bureau of public roads and forest service; from the Department of War, the board of engineers for rivers and harbors, office of the supervisor of the harbor of New York, United States engineering office, Mississippi river commission, California debris commission, board of road commissioners for Alaska and office of public buildings and grounds in Washington.

The President has asked the members of his cabinet to agree on a departmental reorganization bill at the earliest date possible. He has said to them that he hopes such a bill can be put in shape for presentation to the Congress soon after the opening of the special session.--Washington Star.

Earl S. Peirce, District Forest Inspector, and Supervisor of the Medicine Bow National Forest, D-2, has resigned from the Service to become Director of the Extension Department, New York State College of Forestry, Syracuse, N. Y.

Peirce received his education at Phillips-Andover Academy and the Sheffield Scientific School and Forest School of Yale University. He entered the Service as Forest Assistant on July 1, 1910, and served through the ranks as Forest Examiner and Deputy Supervisor, on the Bighorn, Harney, Holy Cross, Cochetopa and Black Hills National Forests. In 1916 he was appointed Supervisor of the Medicine Bow Forest, Wyoming, and was advanced to District Forest Inspector in 1920. Last fall he was detailed to the Branch of Operation in the Washington office.

Due to his wide experience in administrative matters and forest management, grazing and planting work, Peirce was an especially well qualified officer, ranking among the A1 Supervisors of the Service. His resignation will leave a gap particularly hard to fill. Our good will and best wishes for success in his new work go with him.

The death on March 16 of Miss Katharine Williams, a clerk in the Washington office of the Forest Service, is announced with sincere regret. Miss Williams entered the Service on July 19, 1906. She was an expert typist and specialized in tabular work, in which she was remarkably proficient. During the entire period of her service she was connected with the section of stenography and typewriting and for several years past was in charge of this section in the absence of the chief. Although handicapped by physical frailness she was conspicuous for her devotion to duty and was a mainstay in the section during the trying war period when the demands were extraordinary and the workers few. She ceased almost at once to work and to live, having left the office only four days before her death. She leaves a wide circle of friends in the Service who sincerely mourn her passing.

Forest Products Laboratory

An American Forest Officer in India: A brief insight into the life of a forester in India is contained in a letter just received from Mr. C. V. Sweet, one of the dry-kiln experts of the Laboratory who have gone to introduce modern lumber seasoning methods into India.

At the time of writing Mr. Sweet was at Bareilly, which he terms the Grand Rapids of India, presumably because it is the center of furniture manufacture of that country. Official duty took him there to inspect our old friend, the water-spray kiln, a battery of which had just been constructed at the government Wood Working Institute.

Describing his quarters at the principal boarding house in Bareilly, Mr. Sweet says:

"My room is in a converted stable back of the bungalow. There are two tiny windows at one end, the barest of furnishings, and a hole in the wall in which I have a fire to dry my feet. The fireplace has a chimney but it is for appearances only.

"By the light of a wretched oil lamp I push my pen through the smoke. The last drops of a day's downpour of 4 inches are trickling through the thatched roof onto my head and, worse yet, into my bed. From the cupboard in the corner of the room comes the squeak of the "corkscrew twister" as he burrows more deeply into the woodwork. For an hour or so I sit here dressed in my full evening clothes, smoking a cigar which cost me the equivalent of one cent.

"In a little while I will get into bed with my three pairs of shoes and a pair of slippers placed close to my bed in preparation for my nocturnal bombardment of "muskrats" as they file in through the holes in the walls as soon as the light is out. I find that I have an advantage over these little animals even in the dark, because every move they make they squeak or whistle like a rubber doll with a tin whistle in its tummy. All I have to do is to aim my shoe at the whistle and there is a loud silence until I lie down again. Such is one scene of life in India, but it is not all like that.

"This is the touring season here. All forest officers make their field trips now rather than in the hot season or during the Monsoons.

"Next week I start off on a six weeks' tour inspecting certain air seasoning tests which were started three years ago. I am going to have to do it alone except for a clerk, stenographer (male), messenger boy, and bearer (valet) I take the three days' trip to Calcutta by rail, thence to northern Bengal, then a 70-mile "hike" on elephants through the jungle from the end of the railroad.

"I will then return to Calcutta, take a four days' journey by rail to the vicinity of Madras, and then another 80-mile hike from the end of the railroad to the District Forester's bungalow, where I will stay four or five days before returning home."

Effect of Kiln Drying on Wood-Borers: A new advantage of kiln drying over air drying which the Laboratory has discovered is that kiln drying is fatal to some, if not all, wood-boring grubs. This fact is of considerable importance to users of ash, hickory, and many other woods which are attacked by insects. Manufacturers using ash lumber, for instance, are much annoyed by the injury worked by the red-headed ash borer. Air seasoning has no effect on the activities of the grubs, but, according to tests made by the Laboratory on wood infested with them, any kiln-drying process which can be considered practical for seasoning ash of any thickness will put an end to the borers.

The drying experiments were conducted by Mr. Loughborough of the Laboratory at the request of Mr. Craig of the Bureau of Entomology. A report of their joint investigation is to appear in the March issue of the Journal of Forestry.

District 2 - Rocky Mountain District

Cooperative Range Ownership: An interesting instance of cooperative range ownership and management comes to light from the Evanston Country, Wyoming, where, several years ago an organization was perfected, known as the Hereford Grazing Association.

The first act of the new Association was to acquire a tract of land containing 18,000 acres. Later it acquired other small tracts that intermingled with or bordered on its holdings. In this manner, the settlers came to own a practically solid body of land ranging from 2 to 4 miles wide and 17 miles long connecting them with the Wasatch National Forest on which, however, they have no permits at present. In issuing stock, an acre of land was taken as a basis, with a par value of $5. The smallest amount of stock bought by any one person was 665 shares, the largest 4,000. The range was purchased on the deferred payment plan, one-fifth down and the balance in four annual installments at 6 per cent.

As soon as the organization became a going concern, it was approached by a friendly sheep outfit which had to cross its land with a proposition to exchange grazing privileges. This was readily agreed to since the sheepman owned 25,000 acres of range similar to that of the Association. Later, other exchanges were made which, with the use of a little Government land, has for the past 6 years given the Association access to about 150 sections of summer range.

The Association is governed by five directors elected annually. The range foreman handles the cattle and various committees have charge of other matters. Only registered Hereford bulls of improved type are allowed. Small grazing fees are levied on the cattle to cover running expenses, taxes, etc. Eight acres per animal is allowed.

Where Forestry and Recreation Meet: At a meeting of the Denver section of the Society of American Foresters, on February 28, Messrs. C. J. Stahl and M. W. Thompson presented papers on "Where Forestry and Recreation Meet." In the general discussion that followed, it appeared that there was almost a unanimous opinion on the part of both foresters and recreational engineers as to the desirability of cutting timber on practically all National Forest areas. It was agreed that occasional timbered areas along roads should be left unhindered and that no cutting ought to be allowed around lakes or on islands used for recreational purposes, but for the most part, timber sales managed along good forestry lines which result in cleaning up the overmature and dead trees really enhance the value of the scenery rather than detract from the use for recreation.

Extraction of Yellow Pine Seed: The extraction of western yellow pine seed at the Custer Seed Extractor on the Harney Forest was recently completed. 2,150 pounds of seed were secured at a cost of $.496 per pound. The cones were purchased last fall from settlers at the rate of 50¢ per bushel, most of them being gathered by women and children who considered it an easy source of pin money.

District 2 (Cont.)

Distribution of Trees in Nebraska: A total of 119,000 trees were furnished to 698 people in the Sixth Congressional, or Kinkaid, District of Nebraska last spring, under a provision by Congress which provides for the free distribution of trees, so far as they can be spared, to residents of this District. This distribution was started in the spring of 1912 and since that time, 1,200,000 trees have been given to 5,778 applicants. About 200 trees are given to each applicant, the usual package containing half jack pines and half white elms.

Head of Public Relations Visits D-2: Assistant Forester Herbert A. Smith spent a very busy week in Public Relations, where he went into the innumerable perplexities constantly besetting this office, in a most thorough manner. Questions on publication, distribution, cooperation and the relation of this Branch to the other Branches were thrashed out. Mr. Smith's graphic representation of the other Branches--Management, Grazing, etc., as vertical lines and Public Relations as a horizontal line touching all of them is very apt. We feel the need for manuals of procedure, policy, etc., which now assist considerably in guiding the other Branches of the Service.

District 5 - California District

Resolutions of the So. Sierra Cattlemen's Association: At a recent meeting of The Southern Sierra Cattlemen's Association the members voted to continue the Special Bull Rules adopted by them last season, and while a vote as to whether they should allow nothing but registered animals on the ranges failed to carry, they agreed that all bulls should be at least three-quarters pure bred, of a recognized beef strain and that the owner must furnish the Inspection Committee with an affidavit from the breeder to that effect. One bull to each twenty-five head of breeding cows is required.

A resolution was passed insuring the Forest Officers the fullest cooperation of the members of the Association in collecting any data they could furnish in connection with the range appraisal study.

Forestry Exhibit at U. of C.: Paul J. Fair, working in conjunction with Lieutenant Godsbora of the 91st Squadron Air Service, has installed a Forestry exhibit in Room 104 Hilgard Hall at the University of California. This exhibit for the first week was open to University students, under the auspices of the Forestry division of the University. The following week was given over to teachers and school children of the bay region.

The exhibit shows the work of the Forest Service, the extent of the National Forests, how they are administered and protected and how ultimately related the Forest Service is to the economic life of California and the nation.

The Air Service has set up a Liberty Motor and wireless outfit similar to the equipment used on the forest fire patrol airplanes.

Teaching Fire Prevention in Schools: Assemblyman Rosenshine of San Francisco has introduced in the State Legislature an Act to provide for the organization and supervision of a course in fire prevention in the schools of the State. This same measure has been introduced in about 10 State legislatures and is backed by the National Association of Credit Men, the National Board of Fire Underwriters, U. S. Bureau of Education, the State foresters, and many other organizations. It goes without saying that the Forest Service is interested in seeing this measure passed and will do what it can to help along the movement.

Good Example to Follow: Frank P. Cunningham received the following from the Kern County Superintendent of Schools:

"I am very glad to give any assistance I can to help the passage of Assembly Bill 769. The enclosed school calendar will show that we have Fire Prevention Day, which I introduced in the public schools of this county several years ago. We require a detailed report and a certain amount of work and I believe the efforts have been well worth while. If you wish, you may refer to this county as having achieved very excellent results along this line.

We got tired of waiting for any legislation and simply put it into effect."

Summer Camp for Air Service: The U. S. Army Air Service has applied for a permit to maintain a summer recreation camp for its personnel near Kennedy Lakes on the Stanislaus.

The exact location will be determined as soon as the roads open in the spring and it is planned to have the camp sufficiently developed to be in use this coming summer.

Killed Deer Out of Season: Fish and Game Deputy Commissioners, S. J. Carpenter and Harry N. Brittan arrested Harold L. Schleuter of Willows and Ernest Baker at Fouts Springs for a violation of the deer law. These two defendants were taken before Justice of the Peace Mrs. Edith McGahan at Stonyford; Ernest Baker pleaded not guilty and was released under $100 bond; Schleuter pleaded guilty and was sentenced to serve ninety days in the Colusa County jail. Ninety pounds of venison, which were seized, were turned over to the Colusa County hospital.

District 6 - North Pacific District

Do You Read the Almanac?: Possibly not! It is a cinch, though, that many farmers and others do.

In a highly colored publication entitled "Dr. Blank's New Weather Almanac and Handy Book of Valuable Information" (one piece of information being that 12 million copies are printed, and distributed gratis by a local drug firm), appears on page 30, "Honest Testimonials from Honest People," in which the writer depicts the agony of various ailments to which flesh is heir and the heavenly relief obtained by using the said Dr. Blank's Nervine, Liver Pills or Heart Treatment as the case may require.

For relief from these agonies the reader naturally turns to the opposite page where a full page article entitled, "Our Vanishing Forests," greets the eye. Here the artist, still playing with human emotions, arouses indignation over Germany's wanton destruction of the French forests, but adroitly asks whether we get indignant over the fact that a far greater area of our own forest land is annually destroyed by fires, most of them preventable?

The article reviews in a general way the rapid depletion of our forests and is sufficiently spiced with "figgers" to give it proper balance.

The gist of it is "old stuff" to the Forest Service. Its interest lies mainly in the medium for this form of propaganda; evidently we have not yet exhausted all the possibilities for publicity work. The average common or garden American probably wouldn't read a Government bulletin, but the chances are he'd read an Almanac, even Dr. Blank's highly colored one!--D.C.I.

The Fussy Ficus: Charles J. Kraebel, formerly of the Wind River Experiment Station and now Assistant Superintendent of Forestry for the Hawaiian Islands, is having all kinds of experiences. He has been devoting some attention to the propagation of rubber trees, Ficus family. He finds that it was necessary to send the Hawaiian Entomologist to India to spend six months in an effort to discover, capture, and bring back to Hawaii, certain insects which are to be propagated on a large scale. He says: "No species of Ficus here has ever produced fertile seed because the required insects for pollination do not exist in Hawaii. You can realize the interest of this matter for entomologists when you realize that each species of Ficus depends for pollination upon a particular insect different from those required by all the other species in the genus."--J.D.G.

Rangers' Study Course: The D-6 course was begun in December. A total of 195 men in the District are taking it. There will be 1810 papers for somebody to mark when it's completed. Answers are coming in, the course being over 20 per cent complete to date. Ranger Page of the Siskiyou says of it:

"This 'Winter Study Course' is a fine thing and so far as I am concerned is rightly named 'Study Course' for I find that in order to gain anything like a complete understanding of all of the subjects covered I have to study rainy days, Sundays and evenings. I don't even have time to read all of the Weekly Bulletin and News Letter any more, and anyone knows that such a condition spells overwork for the Ranger. I believe the study course to be beneficial and that three days a week can be spent profitably thereon."

Sheep Trails and Fires: An old user of the range, before the Colville Forest was created, gave an interesting description of how he checked a fire that was raging on the Siwash Creek range. He had a large band of sheep grazing on this range, and as a fire was threatening to wipe out the feed, he drove the sheep back and forth near the summit so that a wide trail was made down to the dirt. This was effective in stopping the fire, and his range was saved. --L. B. P.

G-Cooperation: Two additional stock associations for the Wallowa have recently been recognized by the District Forester, and have adopted standard special rules relating to purebred bulls, handling stock on the range, etc. This makes eleven associations on the Forest, the membership including 256 permittees out of a total of 282. They own 23,865 of the 25,437 cattle and horses permitted last season. The remaining 26 permittees graze 1,592 head of cattle and horses, which are scattered over five community and six individual allotments. The improvements constructed by the associations represent an investment of over $20,000, in addition to work done on trails. There has also been built during the past year over 20 miles of drift fence, the cost of which has not yet been received.--N. J. B.

Always Carry Your "Eversharp": On January 21, Ranger J. O. F. Anderson, of the Ochoco, crossed some "warm" man tracks pointed toward a locality where deer are sometimes found at this season of the year. "Well," Jimmie says to himself, "this is my chance," so he took the trail and after forcing his faithful steed through the snow for a few miles he found where the men had separated, two going one way and the third going it alone. Jimmie took the lone man tracks and soon overtook him; Anderson said, "Where are the others?" In amazement the man endeavored to explain that he was alone and hunting for coyotes, but when informed by the ranger that it was only a short distance back to where they had separated, the offender admitted that he and two companions were trying to get a deer.

Very soon the "companions" arrived and the "pow-wow" was on. The new arrivals maintained that they were trying to find some coyotes but "hard-hearted" Jim insisted that it was an insult to a man's intelligence to try to make him believe that coyotes were the object of the hunt in snow two or three feet deep, and further insisted that the three give him a written statement that they were hunting deer, and that they pay the local "J. P." a visit on the following Monday. It was at this moment that "Jim" realized he was without a notebook and pencil. He did, however, have his bank check book and a 25-35 cartridge, so the problem was solved. The bullet was sharpened and the written statement prepared. Later the J. P. said "$25.00 and costs, please," which the men paid after Anderson had played the Good Samaritan and loaned them the money.

This is the first time a ranger on the Ochoco has brought a man into court for just hunting during the closed season; before the offender has always actually killed something.--V. V. H.

District 7 - Eastern District

Dehorning Red Cedar and Cattle: Cattle no longer damage red cedar on the Wichita National Forest. After fire protection methods on the Wichita were pretty well worked out and fires became rare instead of the rule, red cedar began coming in rather plentifully all over the Forest under the oak stands. As the cedar began to reach a little size the Supervisor noticed that it was being broken both in the tops and in the branches rather badly by cattle. Cattle would hook their horns into the trees and twist and break the branches. Rush could not stand for this. He began thinking the matter over and finally hit upon the plan of asking the cattlemen users of the Forest to run none but dehorned cattle on the Wichita. They quite readily agreed to this and the result is very apparent. It is only occasionally now that red cedar is noted which has been twisted and broken by stock.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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SECRETARY APPROVES DEPARTMENT CLUBS

Dear Mr. Sherman:

I have received your memorandum of March 9 advising me of the meeting of the Department Club of Portland, Oregon, held on the 2nd.

This is a matter in which I am very much interested. I am glad to learn of these clubs which I understand have been formed by our employees in the larger places where this Department has branches of its bureaus.

I can think of nothing which will serve as a better medium of bringing the men together on a common footing and smoothing out the difficulties which are so likely to arise between the men in the Department engaged in its different lines of work. A very important feature of the clubs' activities which pleases me is that the various subjects with which the Department is concerned are discussed at the meetings with the view of disseminating the information broadly.

I hope you will do nothing which will in any way curb this spirit of association among our men. It seems to me, in order to be competent representatives and good advisers to the general public, they can not acquire too much knowledge of the work of this Department.

Please let me be advised of any similar notices in the future.

Very truly yours,

Henry C. Wallace

Secretary.

LOYALTY

By Charles H. Shinn, D-5

The late Josiah Royce, who was once a little redheaded boy in Nevada City, wrote a book on the right relations of a man to himself, to his cause, to humanity and to the Universe. This sounds like a large order, but the book, whose title is "Loyalty," is big clear through. Thus he defined his idea: "Loyalty is the will to believe in something eternal, and to express that belief in the practical life of a human being."

Long before Royce wrote this, hundreds of plain people in the Forest work had found out for themselves it is better to be a spoke in a wheel than a spoke out of a wheel. They had not become Rangers for the pleasure of it, nor for the worldly success, but because, having sworn allegiance, they had neither eyes to see nor ears to hear, save as the Forest Service commands.

Came into the Service, because of the loyalty of a great multitude, that leaven which leaveneth the whole mass; came a something which has made man after man of the "old guard" of our Forests more than willing to seek, through toil and travail of spirit the highest permanent good of the local communities which they love and of which they are truly a vital part.

Loyalty (Cont.)

In these days our Rangers say to those who criticise us: "We know just how you feel; we are plain folks ourselves. But we are very sure that the Service is right. Just wait a little, and try to believe that this thing is coming out in the best way for all of you. Help us fellows to make a real benefit to everybody."

A Ranger is not a man whom you can easily put into a book or story anywhere away from his own country. He is one who has come into the Service for the hope and promise of it, and has stayed for the hope and promise and for the sheer love of it. He learns to bless his lucky stars that the fates led his feet into this path. But nevertheless he finds the service hard, not in a low sense, but in a high one; it crowds him constantly toward more care, more "business sense," more knowledge of all sorts of new things. Once, when he was young, the Ranger liked to fish--he very seldom gets fishing any more; he even shows the best fishing places to the tourists and goes off about his business!

One loves to note how the real Rangers of a Forest wear themselves thin and gray every summer. They come and go eager-eyed, quiet, giving of their best, responding to every call, and by the time the first rains come they are the sort of men whom you do not insult by any gush over their heroism. Instead, you sass them good and hard; and tell them that they sleep too much and eat too often.

As an old Ranger once said: "When a fellow isn't working for the pay, or for the promotion, and is puttin' in all there is in him, and is married to the work, and his wife is just as bad as he is, then he has crossed the line into new oceans, under new skies, and has found the real thing. Sounds like poetry, but the boss says it isn't. He says that the idea behind it is just as big and as real as a sugar pine."

To sum this up the Forest Service grows accordingly to the degree in which it inspires plain every day people. It not only goes on with increasing energy, but some of its force passes forever into the shaping of greater human issues than even waters and forests.

Traveling on a Diet

While we do not have any lack of respect for the qualifications and abilities of United States District Attorneys, we have always supposed that they are, like the rest of us, made out of common clay. Since our eyes chanced to fall on a certain page of the Congressional Record the other day, however, we are fearful of having fallen into mortal error. The District Attorney at Portland, Oregon, was voted by Congress the sum of $2,000 for "extra and special services performed by him." No doubt he deserved this compensation, perhaps more. That is not the point here involved. One of the reasons given in the Senate for the appropriation Senator Chamberlain put thus:

His only pay, aside from his salary as district attorney, was $4 per day. If there is a hotel in San Francisco or one in Seattle where a man can live for $4 a day I have never been able to find it.

True enough, Honorable Senators, but how about the hundreds of thousands of officials in various other services of the Government who are restricted by law to this same beggarly $4 a day? For years department heads and other administrative officers have urged a substantially larger allowance, in order that these men might not be compelled to pay their living expenses to a considerable extent out of their own pockets, as they do now, while traveling on government business. Needless to say, in the outside business world, with which Congress is frequently pleased to compare the Civil Service, expense accounts have kept pace with the ever-increasing cost of living.

Why, may we ask, the discrimination?--Clipped.

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"Easy Street lays just off the end of Hard Road, but the more inquiry you make about it the longer it takes to get there."

How to Test a Board Foot Volume Table

By W. B. Barrows--Washington

The Forest Service has hundreds of volume tables. But when a man wants to estimate timber on a certain tract it usually happens that there is no table made from trees measured in that locality. He is forced to choose one that looks fairly promising, but how is he to know whether or not he is justified in using it as it stands? Or, if he is to discount it, how much is he to subtract?

By measuring 100 trees a good test can be made. There may be time to measure only 50 or 30. If the trees to be estimated vary from 10 to 40 inches in diameter, with the largest number between 15 and 20 inches, try to measure test trees in about the same proportion of sizes. Avoid very tall and very short trees.

It is assumed that only down trees will be used in the test. These trees should be scaled in the same way that the trees used in the volume table were measured. Especially important is the top diameter inside bark. If the volume table specifies a uniform top diameter of 8 inches, each of the test trees should be scaled to a top diameter of 8 inches. If the stump height used in the volume table is 2 feet, then allowance should be made for a 2-foot stump on each test tree. It goes without saying that a Doyle volume table should not be tested by the Scribner scale.

Now, having scaled each log, add up the scales of the various logs to get the total scale of each tree. Scale each tree as a whole, by applying the volume table to it. Suppose the table shows volumes by diameter and total height, and one of the test trees, which is 18.3" x 82', scales 210 board feet. The volume table shows that an 18" x 80' tree scales 190 feet. All trees over 75 feet high, and under 85 feet, will be scaled as 80-foot trees by the table, and similarly all over 17.5" in diameter, and under 18.5", will be considered 18" trees, and so on. Tabulate these results; that is, make a list of the scaled volumes of the test trees, and another list of the volumes of the same trees by the volume table. Add up the two columns, and subtract the lesser from the greater. Multiply this difference by 100, divide by the total scaled volume of the trees, and the result will be the percentage that the volume table differs from the test trees.

This is not the whole story, however. Even if this percentage of the volume of the trees as a whole is small, it might be because the smaller trees scaled high and the larger ones low, or vice versa. In order to test this part of it, divide the trees into 2, 3, or 4 groups. If the test included 50 trees from 12 to 36 inches in diameter, one group could consist of those under 20 inches, the next group those of 20 to 28 or 30 inches, and the third group the remaining trees. The total scaled volume of each group is then compared with the corresponding volume taken from the volume table.

If none of these differences amounts to over 10 per cent the table can be considered applicable in that locality. If some of them run over 10 per cent, it will be a matter of judgment. In any case you will have a definite idea as to the correction which should be made in the final timber estimate.

Ranger Bill Says:

There's a heap o' difference between layin' on a job and layin' in it.

I'm readin' the Manual for recreation now that I've finished my Income Tax return.

Viewin' present labor conditions, I figer a Ranger job ain't goin' to look so worse 'bout next fall.

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TYPE ALL ORIGINAL ARTICLES FOR THE

SERVICE BULLETIN - DOUBLE SPACE

Culling the Forest in Western Oregon

H. E. Haefner, Siskiyou

When nature arranged for the distribution of the present tree species she made the sprinkling of Port Orford Cedar heaviest from the Umpqua River south to Elk River along the Oregon coast in the Coos Bay region. North, south and east it occurs more sparingly. On the lowlands close to the ocean it grew to large size--7 feet through inside of bark up to 20 inches thick--and reached a height of 175 feet. It grew close and straight grained and, among other good qualities, it is one of the most rot-resistant woods in the West.

The war created a demand for airplane wood. Port Orford Cedar filled the bill, and contractors went into the woods everywhere for it. They rived out cants made from No. 1 logs, hauled out the best and left the rest in the woods in true American fashion. The war established the market and men are still going into the woods, cutting out the No. 1 logs and leaving the rest. The utilization will not average over 50 per cent of the tree. In 1920 Port Orford Cedar logs sold for $75.00 per M at Marshfield, Oregon, when the same grade of Douglas fir logs sold at the same place for $30.00 per M. The contractors made a handsome profit through the handling of the best logs, but hundreds of acres of commercial forest lost their best trees; the forest was made a fire trap, and the future stumpage price of the remaining stand will be depressed.

The remaining commercial stand of the species is much less than 1 billion B. F. Because of its high commercial value, the stand will be exhausted in a comparatively short time. Future plans should provide for a little government woodlot of 1,000,000 acres or so in the heart of this region to help provide for essential needs in peace or war.

Island Fox Ranching in Alaska

By L. C. Pratt-Chugach

Fox ranching on the islands along the coast of Alaska is developing into quite an industry. The climate of this region, with winter temperatures seldom going below zero and summer ones not often above 80°, is ideal for fur production. The extreme winters of the arctic regions are said to produce a fur longer but much coarser than that of the coast country, while in regions of excessive summer heat the fur does not reach the prime condition, even in winter, that it does in a cooler and more constant clime.

In the Prince William Sound district of the Chugach National Forest, there are about 25 islands, ranging in size from less than 160 acres to about 16,000 acres, under permit for the propagation of foxes. At least two of these islands have been occupied for that purpose since before the dawn of the present century and are still being operated by the original locators, and at a goodly profit too if one may judge by the recent expansion of their business.

Operations in this region are limited almost exclusively to the blue fox, which is an abnormal color phase of the white fox of the arctic, according to scientists who have delved into the matter.

The foxes are liberated upon the islands and run practically in the wild state. Where there is good beach line they live to some extent upon clams, mussels, and the various forms of marine life which drift ashore. They are also extremely fond of birds and eggs and are relentless hunters for these delicacies during the nesting season of waterfowl.

In addition to the natural feed which the foxes secure for themselves, they consume between 300 and 400 pounds of fish or other food a year, which the operator must provide. Thus much of the time of the operator is consumed in fishing. The waters of the North Pacific abound in fish, more than 250 species having been classified.

The fish are cured by salting and drying--mostly the former. Before being fed to the foxes they must be thoroughly freshened for not less than 60 hours. This is accomplished by having two large wooden tanks holding about a week's supply of fish each. While using out of one tank which has previously been freshened, water is allowed to run through the other tank. Thus, when the first tank is empty, the second one is ready for use.

Feeding is done in log feed houses built about the island, usually along the beaches and from a quarter to half a mile apart. These are constructed of logs and are about six feet square. They are built with a trap door that can be set during the trapping season--December and January--so that the foxes can enter but can not leave. The operator is enabled in this manner to retain the choicest individuals for breeding.

After skinning the hides must be thoroughly cleaned and cured. Great skill is required in this work. A skin carelessly removed or cleaned, or improperly cured or stretched, is likely to be classed as a poor fur where otherwise it might have brought top price.

For one who is not appalled by the terrifying loneliness of such a life, there is a great fascination in it. The smaller islands are all one-man propositions. The larger islands are usually operated by two or more men on a partnership basis. A few of the lucky ones have wives who are content with this manner of living. And the strange thing about it is that of the half dozen or so women living on fox islands, absolutely isolated, receiving visitors only at rare intervals, leaving the island not more than two or three times a year, and getting mail not oftener than once in two or three months, I have never talked with one of them who was discontented with the life.

Properly conducted, with a due amount of judgment and foresight, and an immense amount of hard work and constant application to business, excellent yields may be expected. The fox is very prolific, the litters consisting of from five to eleven pups. The mortality among pups is heavy--sometimes as great as 75 per cent. But the raw furs bring as much as $250 each, although the average is, of course, much lower. Breeding stock brings $400 to $650 a pair.

During the last four years prices have touched a level never before known in the business. This has resulted in a great increase in the number of operators. At the present time the demand is very keen for islands suitable for this purpose, but the peak has probably been reached and a slackening up in the demand for islands can no doubt be expected from now on.

Cooperative Fire Protection

By Paul G. Redington

A resume of the cooperative fire protection situation within and adjacent to the National Forests of California will be of interest to all members of the Service.

Timberlands in and adjacent to Forests		14,050,000	acres
National Forests (timbered)	8,759,000		
National Parks, Ind. Res. etc.	1,000,000	9,759,000	"
Privately-owned		4,291,000	"
Area private land solicited by F. S. for cooperation 1920		4,121,000	
Area secured in cooperation		3,041,000	
Balance non-cooperative		1,080,000	

Three-fourths of the non-cooperative area is in the hands of one owner. Prospects of cooperation with this owner are excellent. There is a balance, therefore, of about 300,000 acres which probably includes school land and areas which are receiving incidental protection from the Forest Service.

Of great significance is the following:

Number of Cooperators

1918 - - - - - 440
1919 - - - - - 493
1920 - - - - - 734

This shows remarkable progress which the Supervisors may well be proud of. Negotiations for cooperation with the large owner are now being conducted here. If this is secured many small owners whose lands are involved with the area controlled by this owner will be in a receptive frame of mind to join us in cooperation.

Game Fish Swim Up Stream

It's easy to drift as the current flows:
It's easy to move as the deep tide goes;
But the answer comes when the breakers crash
And strike the soul with a bitter lash -
When the goal ahead is endless fight,
Through a sunless day and a starless night,
Where the far call breaks on the sleeper's dream,
"Only the game fish swim up stream."

The spirit wanes where it knows no load;
The soul turns soft down the Easy Road;
There's fun enough in the thrill and throb,
But Life in the main is an uphill job;
And it's better so, where the softer game
Leaves too much fat on a weakened frame,
Where the far call breaks on the sleeper's dream,
"Only the game fish swim up stream."

When the clouds bank in - and the soul turns blue -
When Fate holds fast, and you can't break through -
When trouble sweeps like a tidal wave,
And Hope is a ghost by an open grave,
You have reached the test in a frame of mind
Where only the quitters fall behind,
"Where the far call breaks on the sleeper's dream,
"Only the game fish swim up stream."--A. D. Newkirk, in the
Onondaga Sportsman."

Public Use of Service Maps

For several years the Washington office of Maps and Surveys has been engaged in the task of compiling and printing a standard base map on a scale of four miles to the inch for each of the National Forests. The project is nearly finished and we expect to have all the Forests supplied during this year. While we have concentrated our efforts on furnishing the Forests with quarter-inch maps we have at the same time prepared and printed a number of maps on a scale of two miles to the inch. About three-fourths of the Forests now have standard one-half inch maps. Several Forest Atlas Folios, on a scale of one mile to the inch, have been prepared for those Forests which have been covered by accurate surveys.

Our maps have become very popular, as they usually cover areas that have not been mapped by other Departments. If we were to advertise the fact that the Forest Service has maps of certain areas, we would very likely be deluged with requests, and our cost of administration would immediately jump. There would be no compensation to the Government for this additional expenditure, for the present law requires that receipts of this kind can not be credited to the Bureau making the sale. While it is recognized that it would be for the general public good to give wider circulation to our maps, it is believed necessary, for the present at least, to confine our distribution to users of the Forests and to those with whom we expect to do business, either in the sales of timber, renting of summer home sites, leasing of grazing land, or in other ways.--T.S.B.

Research Work Needs Publicity

By G. A. Pearson, Fort Valley Experiment Station

At the time the American Forestry Association was launching the movement to create greater public interest in forest research, the Fort Valley Experiment Station was pushed into the local limelight by circumstances entirely independent of any publicity campaign. It all came about in this way.

From time immemorial, the sheepmen in District 3 have regarded it as their inalienable right to run their sheep where they please, when they please, and as they please. Investigations by the Forest Service have shown that the enjoyment of said rights threatens ultimate extermination of the western yellow

Research Work Needs Publicity (Cont.)

pine forests by preventing natural reproduction. At first the sheepmen were disposed to treat the matter as a joke, but when last year they were confronted by the facts in the form of concrete demonstrations they conceded that the situation should be remedied. The majority of the sheepmen were disposed to take a reasonable view of the matter. But sheepmen are only common mortals subject to domination by prejudice and self-interest, so it was only natural that there should develop a group of "irreconcilables." While the Forest Service was rejoicing over the change of heart which had come over the ancient enemy, and while the rank and file of the sheep industry were going about their business, the "irreconcilables" were plotting revenge. They figured that the Fort Valley Experiment Station was at the bottom of all the trouble, and so they decided to destroy that institution at one fell swoop. The blow fell unexpectedly at the meeting of the Arizona Wool Growers' Association in Flagstaff last July when the following resolution was adopted:

"That the Fort Valley Experiment Station, the work of which has been an entire failure and a useless expense to the amount of approximately $20,000 per annum, be abandoned and that the lands occupied by it be restored to entry."

A few months later, after the Flagstaff Chamber of Commerce had passed a resolution pledging their support to a bill asking Congress to appropriate funds for the Experiment Station, the same group of individuals succeeded in stirring up so much agitation that at a subsequent meeting the resolution was withdrawn on the grounds that the Chamber of Commerce as an organization should not take part in a controversy between the Forest Service and the sheep industry.

While the above incidents were embarrassing, subsequent developments indicate that they are not to be regarded as an index of adverse public opinion, but rather as an index of public ignorance regarding the Experiment Station. This being the case, the discussion provoked by attacks such as those recently experienced can only serve a useful purpose. To make the most of these situations, however, the Forest Service should do its utmost to set the public right in regard to the purpose and accomplishments of experiment stations. It is not sufficient to conduct a publicity campaign in the newspapers. More can be done by personal contact. Because of the prominence which the Fort Valley Experiment Station has been forced to assume in the matter of sheep control during the past 12 years, the feeling has developed that the interests of the Experiment Station and those of the sheep industry are antagonistic. When we consider how many people in northern Arizona are directly or indirectly interested in sheep, we can not allow this misapprehension to continue. The responsibility for correcting it is as much a part of administration as of research.

Washington Notes

The Federal civil force of the United States numbers approximately 640,000 officials and subordinates. Of this total less than 15,000 are "Presidential" appointees divided as follows: 12,899 first, second, and third class postmasters; 400 consular officials; 150 in the diplomatic service; 1,100 miscellaneous, including chiefs of bureaus, secretaries, collectors, superintendents, etc.

What Congress Did: The third session of the Sixty-sixth Congress, just adjourned, passed 114 public land laws; of these 9 concerned solely Forest Service work and 3 others made appropriations for the Service. There were also 4 public land laws touching our claims work.

Exchanges of lands were authorized on the following National Forests: Montezuma (Public 335); Carson (Pub. 382), and Rainier (Pub. 387). Besides specific exchanges were authorized with Henry Blackburn on the Sevier and with A. A. Bruce on the San Isabel (Pub. 333). Additions to the National Forests may be made by the President on the Weiser (341), Nezperce (Pub. 345), Targhee (Pub. 347), and Lemhi (Pub. 350) National Forests.

Deficiency appropriations (Pub. 338) were made of $725,000 for fire fighting, and $100,000 to salvage wind-thrown timber on the Olympic National

Forest. In addition to increases made for certain Forest Service activities, the Agricultural Appropriation Act (Pub. 367) will permit the construction of temporary buildings for air patrol work. It also authorizes deferred payments by grazing permittees, and provides $1,000,000 for the acquisition of lands under the Weeks Law.

The following changes of interest to the Forest Service were made in the public land laws: the time for doing annual assessment work may be extended to July 1, 1921 (Pub. 290); two entrymen were given rights to enter certain tracts already listed in the Black Hills (Pub. 299); provision is made in certain cases where entrywomen marry (Pub. 399), and certain war veterans are excused from residence or improvements on homesteads (Pub. 351).

While Congress did not see fit to pass a general exchange measure, the three special ones enacted are good workable laws. Of the exchange acts, the Rainier provides also for a cooperative agreement to protect the watershed used by the city of Tacoma. An earlier edition of the Bulletin told of the passage of the salary bonus to Government employees.

The four additions authorized in one session is an indication that Congress is looking with more favor toward placing under National Forest administration lands valuable for watershed protection which without protection will be overgrazed and produce erosion.--W. J. Mangan.

FOREST PRODUCTS LABORATORY

Plywood Mapboards for Lookouts: With the object of finding a way of constructing and finishing Rangers' map-boards so that they will not warp, the Laboratory has made up twelve experimental boards and sent them to the western Districts for service tests. Three kinds of construction are being tried out in the specimens--solid yellow poplar; 3-ply wood with birch faces glued on a poplar core; and 5-ply wood, in which the three inner plies are poplar and the faces are maple.

Two map-boards of each kind were sent without any protective coatings. They will be finished the same as boards now in use. Two boards of each kind were coated with aluminum leaf, the finish which has been so effective in preventing the warping of airplane propellers.

University Cows Put on Sawdust Diet: Another series of feeding experiments has been started by the Wisconsin College of Agriculture to try out the hydrolized sawdust cattle food made at the Forest Products Laboratory. In a preliminary feeding trial cows were fed for three months on a "one-quarter-sawdust" ration,--two pounds of the sawdust food being used to replace a pound of barley. During this trial the cows not only kept on giving milk in the same abundance as before, but even gained in weight. And the Laboratory jingle has it that, "They forsook their oats and barley for the grain that's in the wood."

Whether the cows will eventually show a hankering to go back to their old diet, or whether they will continue to lick up the "wood meal" in even greater proportions than before will be told in the new test.

Huge Testing Machine: A machine for testing very large wooden columns has recently been erected at the Laboratory. The new machine can exert a force of a million pounds and can crush a wooden post a foot square. Its jaws open to take in timbers or assembled wood structures thirty feet in height. A great range of testing speeds enables it to apply its tremendous load with the fatiguing slowness of a building settling on its foundation timbers or the speed of a train dashing on to a wooden trestle. Architects and engineers have very meager data of the kind which this machine can supply.

District 1 - Northern District

Grazing Appeal Case: A report of the reconnaissance work for 61,000 acres of railroad and private lands on the Gallatin and Madison Forests, leased by the old Taylors Fork Cattle Company, has just been completed. The carrying capacity of these lands was one of the points at issue last winter when the above company carried an appeal case to the Forester and thence to the Secretary. The company insisted that the lands in question should carry at least 20,400 sheep while the Secretary held that a G-7 permit for not to exceed 16,400 sheep would be granted in 1920, but promised the company that although"determination" of the carrying capacity would be made to settle the question. An intensive reconnaissance was made which incidentally covered about 55,000 acres of intermingled Government and private lands. According to the data secured from the reconnaissance the leased lands have a carrying capacity of 17,600 sheep.

New Game Legislation for Montana: House Bill No. 13, which was drafted and fathered through the House and Senate by the Montana State Sportsmen's Association, is the most constructive piece of fish and game legislation that has ever been introduced in Montana, and it is believed places Montana at the head of the list of all the States for constructive game legislation.

This bill provides for a commission of five members (appointed by the Governor) who shall have supervision over all the wild life, fish, game and non-game birds and water fowl, game and fur-bearing animals of the State. It has full power and authority to enforce all laws respecting the protection, preservation and propagation of fish, game, game and non-game birds in the State. It also has power to divide the State into game districts and to declare closed seasons for hunting and fishing within the specified districts, or to close the season on any species of game, fish, or game birds threatened with undue depletion from any cause and to close any stream, public lake or portion thereof for limited periods of fishing when such is necessary to protect stocked water, etc.

It has power to establish game refuges upon the petition of 75 per cent of the property owners and those financially interested in the setting aside of any area. It has full power to establish and maintain fish hatcheries, game farms and a biological department, also authority to appropriate money from the funds at its disposal for the extermination or eradication of predatory animals.

Another important feature of the bill is that it has complete control over all of the game wardens and deputy game wardens of the State, who must have certain qualifications and who will serve at the pleasure of the commission. All sums collected or received from the sale of hunting and fishing licenses, from the sale of seized game or hides, or from fines collected for the violations of the fish and game laws shall be turned into the State Treasurer and placed by him in the special fund known and designated as the State Fish and Game Fund. Said fund is exclusively set apart and made available for the payment of bills authorized by the Fish and Game Commission. --Glen A. Smith.

District 2 - Rocky Mountain District

"We Belong to the Permanent Order of Things," was the summing up of Col. Greeley's address to the general assembly of the Denver District Office on March 16, a message that in inspiration and helpfulness has seldon been equaled. With appropriate reference to the ancient Wrestler, who, when thrown, gathered strength and renewed courage from contact with Mother Earth to renew the combat and overcome his adversaries, Col. Greeley aptly compared the members of the Service to the Wrestler, in that, when discouragements seem to come thickest, the very work upon which we are engaged is a vitalizing influence that stimulates and gives new heart until ultimate victory.

No other work is so permanent and enduring as that of the forester, nor one that in greater degree makes this world a better place in which to live. What other work affords traditions of public service and traditions of opportunity like the Forest Service? The prevailing good cheer in the Forest Service is attributable largely to the urge and inspiration of such work as ours. It is unlike the ofttimes work of a temporary nature performed by other services, or work which concerns the adjustment of matters and not that of a creative nature. There is no danger of a forester's working himself out of a job, since the more trees we grow, the more valuable our plant, the bigger our business, the greater our usefulness.

The Permanent Order of Things to which we belong is a source of infinite strength, and the progeny of the forests now being planted and improved may grace the hillsides and mountains after the pyramids of Egypt have crumbled, and contribute in a great degree to the prosperity and happiness of mankind. So who can conceive a greater service than in contributing in however small a way to a work which must carry on, improve and extend as enduringly as Time.

The Forester, with Assistant Foresters Carter and Headley, and Inspector Kelley were in Denver for the week attending the allotment conference.

Mild Winter in Michigan: For the first time since the creation of the Forest, the Rangers on the lower peninsula of Michigan have been able to use their automobiles through the entire winter. The weather has been exceptionally mild and for the two months of January and February alone, an excess of 360° above the normal temperatures has accumulated. The fire season has not been opened officially through reported fires, but the hazard on March 7 and subsequently has been equal to that of the same time in April in other years, as the entire Forest area is without snow.

Headquarters of the San Isabel Moved: The headquarters of the San Isabel Forest are being moved from Westcliffe, Colorado, to the Federal Building in Pueblo, Colorado.

Planting Operations Started: This is the earliest spring in years, and nursery and planting work have already started. At the Bessey Nursery, Nebraska Forest, all of the transplants were dug the first week in March and planting was started on March 10. No such record has occurred since 1911.

At the Monument Nursery on the Pike, a crew started to work on March 16, digging trees and preparing them for shipment. Since these trees will be planted at high altitudes, it will be necessary to bury them in snowbanks until planting sites open up.

A pleasing feature in this spring's operations is the abundance of labor and the willingness of the men to work at considerably lower rates than were paid during the past several years.

San Isabel Relief Map: Miss Helen Dowe, the fire lookout of Devil's Head on the Pike, is in Pueblo putting the finishing touches on the painted relief map of the San Isabel Forest. The map attracted a good deal of attention while on exhibit in the window of the Denver Dry Goods Company, where it was displayed through the cooperation of the Missouri Pacific Railroad. As soon as finished, it will be placed in the "San Isabel Room" at the Congress Hotel in Pueblo.

Huber C. Hilton has been appointed to fill the Supervisor's place on the Medicine Bow Forest left vacant by the resignation of Earl S. Peirce. Hilton entered the Forest Service in July, 1911, and was employed in the Rocky Mountain region until August 1915, since which time he has been in charge of the Michigan National Forest.

Robert G. Schreck, Forest Examiner for five years on the Superior Forest, Ely, Minnesota, leaves shortly to assume the duties of Supervisor of the Michigan.

District 4 - Intermountain District

Forest Pictures in Demand: The past week four reels of Forest Service pictures were displayed in two of the Boise movie theaters and at the U. S. Public Health Service Hospital. Also, local Forest slides and a set of "Forest Conservation" slides are being shown for the benefit of the fifteen Boy Scout troops, a descriptive talk being given by Supervisor Campbell on each occasion. The Scouts greatly appreciate the pictures and ask for more and it gives a splendid opportunity to do missionary work along Forest protection and conservation lines.

District 4 (Cont.)

Boy Scouts Build Telephone Lines: On March 12, the Boy Scouts of Troop Seven made an early morning hike to Camp Straughn on the Boise National Forest for a day's outing and field tests.

The forenoon was spent in the construction of two one-fourth mile telephone lines with a central station and field posts, by two competing teams. The central receiving board was made by one of the Scouts and Forest Service emergency telephone wire and test set instruments were used. In nine minutes one of the teams phoned in from their outpost, followed immediately by the report from the second team leader. The winning team had their line up in first-class shape, with good clearance and a degree of efficiency that was surprising. The Scouts enjoyed the work greatly and received considerable valuable information. The telephone work was carried out under the direction of the Forest Supervisor, and the Scouts have asked that he assist them in their wireless test work on the nineteenth of March at the same camp.

District 5 - California District

First Across the Sierra Nevada: An interesting article was written some years ago by Prof. W. L. Jepson covering the exploration of the Sierras by Capt. Joseph Walker in 1833. This was eleven years prior to Fremont's and Carson's passage and is claimed to be the first trip across the Sierras by a white man. Walker came over from Salt Lake, via Humboldt River, Carson Lake, Walker River and Lake, to Mono Lake. Here he arrived in October 1833 and after twenty days hard scrambling finally reached Yosemite Valley November 13, 1833. From the records he passed over the Sierras near the headwaters of the Merced River, which would indicate that he probably took the Bloody Canyon route over Mono Pass. A small lake, Walker Lake, lies at the foot of this canyon on the east side and no doubt is named after the explorer.

An appropriate metal sign will be placed by the Service near Mono Lake with brief narrative covering this.--Mono.

To Preserve the Redwood Groves in Humboldt Co. A bill is now before the State Legislature asking for $300,000 to further this work.

Appealing for the preservation of the redwoods, Prof. W. L. Jepson of the botany department, University of California, said, "When scientists and sages from all over the world journey to California to see the marvelous trees in the land where they have reached the highest expression, shall we have to say that all those trees have been logged?"

1921 Camp Ground Development Starts: All indications point to another favorable year for camp ground development work in this District, as the following shows:

1. The town of Quincy has appointed a live Committee of three to develop a public camp in the town limits. This will be largely used by the numerous tourists who visit the Plumas Forest.
2. The town of Auburn is about to undertake the development of a public camp at Tamarack Flat on the Tahoe. The Forest Service, through a lease from the S. P. Ry. Co., furnishes the land and the town the necessary funds.
3. And here is what Benedict says:

"The other day at a conference with the Madera Board of Supervisors they allotted me $500. for the purchase of material for camp grounds at Bass Lake. I plan to put this money into sanitation and water supply for the two camp grounds at the Lake, and will use mostly contributed labor for its construction, work starting as soon as we can get material on the ground."

Timber Sale Notes: On March 2 the McCloud River Lumber Company was awarded the timber on the Lava Bed Chance of the Shasta Forest. The estimated stand and the stumpage prices are as follows:

80,000 M feet	Yellow Pine	@ $4.00	per M.
9,000 M "	Sugar Pine	" $4.50	" "
10,400 " "	White Fir	" $1.25	" "
1,800 " "	Incense cedar	" $1.25	" "

District 5 (Cont.)

The recorded history of the Lava Bed Chance is brief, but interesting. The merchantable timber occurs on islands of deep soil surrounded by rough lava flows and it was not until about 1918, in the course of a grazing investigation, that Forest officers discovered the extent and quality of this stand. The McCloud River Lumber Company became interested in the tract and in 1920 the area was covered by a timber survey and appraisal investigation and was advertised for sale.

In order to reach and log the timber the lumber company must construct between 20 and 30 miles of railroad spurs. Two miles will cross the lava flows. Here it will be necessary to haul in dirt for levelling up the road bed, since smoothing any of the lava, except the high crests, would be extremely difficult. Another difficulty in the way of operation is the absence of streams on the area, making it necessary to transport by tank car the water required for camp and logging purposes.

This happy discovery by Forest officers will mean adding $370,000 to the receipts of the Shasta during the next few years. It is expected that cutting will be completed by 1926.

The Federal Employees of Sacramento are becoming interested in the establishment of a summer camp for themselves and families on one of the National Forests accessible to Sacramento. Mr. George F. Davis of the U. S. Geological Survey, who is the prime mover in the matter intends to call here in the near future and talk over the proposition in detail.

The Blithesome Forest Assistant: The form, announcing an examination for the position of Forest Assistant to be held the latter part of this month, departs somewhat from the announcements of the past. Apparently the Service is to take a greater interest in food than it has heretofore, as the applicant will have to give a treatise on the preservation and utilization of food. Sometime and somewhere some one coined the phrase "callow Forest Assistant." This did not set well with the one who prepared the announcement, as the maximum age limit is raised from somewhere in young middle age to the ripe old age of 70. The blithesome Forest Assistant of 69 or 70 will be out of luck, however, when it comes to receiving the benefit from the Retirement Bill. It will be remembered that service of 15 years is necessary to secure retirement with an annuity.

Want More Salt on the Range: At a recent meeting of the Surprise Valley Stock Association and the local farmers, a resolution was passed requesting the Supervisor to require 10 pounds of salt on the range instead of 7 pounds per head. We have believed for some time that 7 pounds was not sufficient on the Warner Range and it is gratifying to have the stockmen go on record as favoring heavier salting.--Modoc.

District 6 - North Pacific District

Special Act of Congress for Cow: During the construction of the Little White Salmon Road, Columbia National Forest, in 1915, by the Forest Service, several cans of worthless powder were thrown away into the brush. In the spring of 1918, a cow belonging to E. Willard discovered these cans and decided that powder was an extra good food. After partaking heartily the cow up and died. Willard had a just claim against the Forest Service, and every effort was made to provide payment. Under the law, however, it was necessary to secure enactment of a special relief bill in Congress, so that Willard could be paid $6 for his cow.

How Do They Get That Way? A Cascade Ranger received the following application for a lookout job from a man who had been in a bank for some years:

"My reason for seeking employment in the forests of the elevated regions during the months of the fire-patrol season is to improve my health by an outdoor vocation which combines an active and pleasant life with one of a partially remunerative service." And then just to show how feelingly he senses Nature in all her moods--"Some people prefer to spend their vacations at the sea coast where old ocean daily bathes the sandy shores with the ebb and flow of the ceasless tides; but for me nothing is so charming as the high altitudes and playgrounds of the wild animals. Nothing satisfies me so much as the landscape of the high mountains with their rugged canyons, and their evergreen spires of fir, cedar and cypress pointing out the constellations by night and forming the cool shady labyrinth of flowery paths and enticing byways for alluring patrol by day."

Departmental Club: The regular monthly luncheon meeting of representatives of the different Bureaus of the Department of Agriculture in Portland was held on March 2 at the Chamber of Commerce. The following Bureaus were represented, several men usually attending being out of town; Weather, Animal Industry, Forest Pathology, Crop Estimates, Biological Survey, Entomology, Forest Service, Federal Game Warden, Federal Horticultural Board. Dr. J. S. Boyce gave a talk at the meeting on common defects of lumber due to fungi.

Society of American Foresters: Regular monthly meetings of the North Pacific Section are now held on the second Wednesday of each month at the Public Library, Portland. At a meeting in February, Dr. J. S. Boyce spoke on Tree Diseases and Mr. A. J. Jaenicke on Forest Insects. At the March meeting, Mr. C.S Chapman gave a very interesting talk on Recent Forest Legislation in Oregon and District Forester Cecil spoke on the Olympic windthrow, with an outline of the plans being made for forest protection.

Livestock Associations in D-6: On March 15 the Forest Service was cooperating with 137 livestock associations in Oregon and Washington. Aside from the limited and scattered grazing areas west of the Cascades, over ninety-five per-cent of the used range in District 6 was under cooperative management. In excess of ninety per cent of the grazing permittees, numbering over 3,800, are members of some association. Three State associations, three of smaller regional importance, and 131 county, Forest or grazing division associations are recognized.

The majority of the associations have adopted and enforced special rules relative to handling stock on the range, round-ups, beef rides, salting and range improvement. A considerable number have special rules in regard to bulls and breeding seasons, vaccination for black leg and the burning of carcasses, dehorning, fire suppression and general cooperation, Several have gone on record, including one State sheep association, in favor of close cooperation with the Service in the enforcement of game laws and the care of recreation areas. Many thousands of dollars have been expended in cooperative range improvement and more is being constantly spent in accordance with mutual plans for more intensive range management.

The Supervisors of District 6 are firm believers in the value of cooperation with livestock associations in matters of range management and general administration and several have expressed their determination to have their Forests 100 per cent organized in the near future. It is believed that this mark has been reached at the present time on the Ochoco Forest.--E.N.Kavanagh.

Tree Rings: The paragraph in the Service Bulletin of December 20-27, 1920, on "Tree Rings and Climatic Fluctuations," by Prof. E. A. Douglas, has recalled that data along this line has been noted on the Deschutes.

For the past three years Silver Lake has been dry. Prior to that period "Old Timers" used to tell of a time when the lake went dry 40 years ago and to create no little wonder by describing how fields of grain waved wherever since there had been an inland sea covering some 20 sections. But now the wonder has been duplicated, for tons of grain have been raised on the lake bed for three successive years. This has led to speculation as to whether or not 80 or 90 years ago the bed of the lake may have been dry and perhaps many times before that.

In 1919 some dead yellow pine trees were being felled for post timber north of Fort Rock, when attention was drawn to a stump about 30 inches in diameter by the peculiar arrangement of the annual rings, a series of comparatively thick rings alternating with others which were so thin as to make counting difficult. On counting the rings it was discovered that the thin rings recurred with remarkable regularity every 35 to 40 years.

If the record of the stump has been read correctly, old Silver Lake will fill again soon and unless it is drained by artificial means we will not see the bottom for another climatic cycle of 35 to 40 years.--W. O. H.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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PUT HEART INTO THE CIVIL SERVICE

"Work for the Government means an opportunity for service and accomplishment, all of us together putting forth our best efforts. It does not mean mere job-holding. With the heads of the Departments I welcome the cooperation of the employees in solving the problems of the Civil Service and in building up Government efficiency. This is my message, in brief, *** to all federal employees."

PRESIDENT HARDING.

The Incendiary Cigarette

One day last summer, in discarding his cigarette before entering a matinee in Boston, a Harvard student tossed it into the lace dress of a women in the lobby of the Colonial Theatre. There happened to be a gentleman in the lobby who smacked out with the palms of his hands the fire running in the threads of the lace.

The American fire waste caused by smoking is costing the nation about $45,000 per day. Every fire from this cause is preventable. Every one is started by an unconscious incendiary.

The "Insurance Press," that capable journal of the underwriting world edited by Franklin Webster, recently made the interesting suggestion that the manufacturers of cigars, cigarettes and smoking tobacco print in large letters on each box or carton an arresting warning against carelessness. Mr. Webster says:

"A vast amount of valuable space on tobacco containers is now either unused or else devoted to unnecessary decoration.

If, for example, smokers, before lighting up, were reminded that they caused a fire damage every minute of $50 or more, it is certain that during that particular smoke they would be careful, and since both carefulness and carelessness are largely mere matters of habit, a habit in the right direction might be formed by this simple expedient.

Or, if mere kindly suggestion is unavailing, then put a little more muscle in the arm of the law. If automobile drivers can be charged varying fines for careless driving, which exposes to hazard only a few lives, surely a penalty should be inflicted upon a careless smoker who jeopardizes possibly the lives of hundreds.

The Incendiary Cigarette (Cont.)

It may very well be that we shall have to seek legislation to curb this recklessness. Anyone who will observe the cigarette butts on sidewalks, in gutters, in car stations, or in every out-of-the-way corner of places where people congregate, will realize the extent of this evil menace. It is noted that some discarded cigarettes burn their entire length, while in others the fire dies out as in a match stick that has been treated for afterglow. Assuming that differences in the character of the paper wrapper are responsible for this difference in combustibility, and in the hope that all cigarettes might be made slow-burning, an inquiry on the subject was addressed by the National Fire Protection Association to the American Tobacco Company.

The American Tobacco Company did not reply."--National Fire Protection Association Quarterly.

Municipal Camps of California

By L. A. Barrett,--D-5

Since it is probable that California has taken the lead in the development of Municipal Recreation Camps, where the residents of the cities maintaining the camps may obtain a summer outing at cost, the following brief report may be of interest to other Districts:

Number of free permits issued by Forest Service for Municipal Camps ------ 8
    Los Angeles ------------------------------ 3
    Sacramento ------------------------------- 1
    Oakland ---------------------------------- 1
    Fresno ----------------------------------- 1
    San Diego -------------------------------- 1
    Riverside County ------------------------- 1

Number of Camps operated in 1920 -- 4
    Los Angeles ------------------------------ 2
    Sacramento ------------------------------- 1
    Oakland ---------------------------------- 1

These 4 camps represent an investment of $70,000 and nearly 5,000 guests were accommodated last season.

In 1921 Los Angeles will have a third camp in operation and San Diego will certainly open its camp. Fresno and Riverside County hope to open up also.

In addition to the camps the Los Angeles Playground Department organizes and supervises two week hiking outings in the Angeles Forest.

Three of these eight camps are on the Angeles, two on the Cleveland and one each on the Sierra, Stanislaus and Eldordao. The camps are from 25 to 150 miles from the municipalities that maintain them.

Only residents or tax payers of the municipalities that operate the camps are eligible as guests, and in view of the low cost of the outing each camper is required to render on an average one hour's daily service, as outlined by the Director in Charge, and must also furnish his own bedding. Guests are well housed, fed and entertained.

The following rates for a two week's outing, including transportation, were in effect last year:

Forest	City	Name of Camp	Miles to Camp	Cost
Angeles	Los Angeles	Seeley	75	$12.75
"	" "	Radford	90	14.25
Stanislaus	Oakland	Oakland	150	18.00
Eldorado	Sacramento	Saylcs Flat	90	25.00

These rates were all for adults and the rates for children under 10 were from 50 to 60 per cent of the above.

The lower rates at the Los Angeles camps is probably accounted for by the fact that these camps have been in operation for several years, while 1920 was the first season for Sacramento and Oakland. The Los Angeles camps also accommodated over 3,500 of the 5,000 guests above mentioned.

The business men of Sacramento are so well pleased with their municipal camp that they are raising a fund of $10,000 to be donated to the city to build permanent cabins at the camp for sleeping quarters, such as are already installed at the Los Angeles camps.

Amphibian Biped Discovered in Alaska

One fine summer day the good ship Prospector, under charter to the Chugach, was riding calmly at anchor near a narrow neck of land in Port Wells. The weather was calm and not a ripple disturbed the surface of the broad expanse of blue water which was thickly dotted with icebergs from the numerous glaciers of the vicinity.

Captain Scott was busily engaged in basting one of his famous leg of lamb roasts when he heard a tremendous splashing turmoil just across the said narrow neck of land. Upon looking out the port window he observed an undulating swell traveling out across the Sound.

"Must be a thrasher whale disporting himself around that point," said the captain. "Never heard of one so close inshore in these waters. Guess I'll investigate."

Whereupon he worked the Prospector into a position permitting him to jump ashore. The noisy commotion in the meantime had ceased. The captain began stealthily picking his way toward an opening which would offer a view of the region from whence had come the unknown commotion, and upon reaching this point of vantage, "whack" came another unknown sound.

"Gosh a'mighty!" exclaimed the captain, "is it possible that beaver are working in salt water, or have I missed too many southbound boats and am beginning to hear things that can't be seen?"

Before him the water was calm and serene with no living thing in sight, but the noise continued at irregular intervals--Whack! whack! Whack!

"Seems that that noise is being made on dry land," muttered the captain, "yet I could swear it's a beaver swatting the water with his tail."

Ensued another careful stalk, which resulted in the startling discovery of Senior Clerk Pratt standing on the beach clothed only in the garments which nature had provided to cover his 250-pound frame, industriously engaged in laboriously wringing out his wet clothing the while slapping viciously at the mosquitoes which showed a decided affinity for the more tender portions of his anatomy.

When asked for an explanation, Pratt stated:

"I was making an exploration cruise in the tender and decided to come ashore on that nice level shelf of rock. Guess I must have dismounted on the off-side--(Pratt used to be stationed on the Malheur in the cow country)--without holding onto the halter rope. At any rate, when I stepped ashore the boat shied and started out to sea, so I just naturally had to swim out and herd the darned thing."

Thus began Pratt's education in seamanship, but it is only fair to add that he now knows the difference between a hackamore and a boat's painter, and he no longer uses the terms "off-side" and "nigh" when he means "starboard" or "port."

Are Yellowstone Elk in Danger of Extinction?

By J. W. Nelson

Numerous articles which have appeared in the press during the past few years have caused this question to arise in the minds of those who are not personally familiar with conditions within and immediately surrounding the Yellowstone National Park. The question can best be answered by giving the latest facts and figures available.

The Yellowstone elk are divided into two distinct herds, known as the Southern or Jackson Hole Herd, and the Northern or Yellowstone Herd, and will be discussed hereafter under these headings.

The Forest Service became most actively interested in the study of the elk problem in the Yellowstone region early in 1916. Some consideration had been given the question prior to that time, but not on such a detailed or comprehensive basis. An actual count was made of both herds during March and April, 1916, which resulted in placing the Jackson Hole Herd at 19,761 animals. The number in the Northern Herd was not actually determined until May, 1917, when it was found to contain 19,345 head.

The Forester, after making a personal investigation during the summer of 1918, joined the Biological Survey in issuing a bulletin in June, 1919, entitled "Our National Elk Herds." The Bulletin contained a proposed program for the future care and management of these herds. Many features of this program have already been put into effect through administrative action. Other parts of it are dependent upon the passage of necessary Federal and State legislation to carry them out.

Federal legislation has been entirely lacking so far, nor is there any prospect of relief from this source in the near future.

Wyoming and Montana have both passed revised game legislation this year. Each State has provided for a Game Commission (in Montana this is to be a non-political commission) clothed with rather broad authority regarding the closing of areas to hunting, the establishing of game sanctuaries, the closing of certain waters to fishing in order to protect spawning waters of stations or to prevent undue depletion of fish. These are all progressive steps, and these States are to be highly commended. Though it has not been possible as yet to make a thorough study of this new legislation, it is doubtful if it is within the power of the States to prevent a still further reduction of the elk.

The Jackson Hole Herd has been reduced more than 10,000 head in addition to the annual increase in the herd during the past five years. A much larger loss has resulted in the Northern Herd during the past four years. With the two herds now containing less than 15,000, it is quite evident their future is not bright.

The tremendous loss that has recently occurred in these herds can not be attributed to a single cause. The one most responsible, however, is the almost total lack of suitable winter range in Government ownership. Were there winter ranges within the National Forests the solution would be comparatively simple, even though disastrous to the settlers dependent upon these ranges for their sustenance. Areas upon which the elk are absolutely dependent for winter forage are now largely in private ownership and can only be secured for use by the elk by purchase or some other arrangement with the owners. The areas within the Forests most suitable for winter range for the elk have been set aside for that purpose as a temporary expedient. But these areas are neither well suited nor located to meet the objects desired. Even with this assistance the elk are barely able to survive mild winters, and when a severe season occurs losses from starvation are appalling. It must inevitably follow that these herds will soon be reduced to the number for which hay can be provided during the winter unless winter ranges are immediately provided for them.

It is not too late to preserve these herds in goodly numbers; but there must be a thorough recognition of responsibility and adequate State and Federal legislation.

Common Names of the Sequoias

By W. R. Mattoon--Washington, D. C.

The people of this country rightly have an unusual pride and interest in the redwoods--the two species of Sequoia. There is very good reason for cherishing and stimulating this interest, and foresters should be first in the line. The official common names of the trees, "redwood" and "bigtree," although adopted many years ago, have never come into common or popular use, and for this reason a revision seems highly desirable.

Everybody knows the two trees as "redwoods." Hence, it does not seem desirable, even if it were possible, to attempt longer to bring about any decided change in this name. The wood of both trees is characteristically reddish in color. To apply the name "redwood" to only one of the species appears obviously inappropriate. Although expressive of large size, the name "bigtree" fails to convey adequately the combined idea of the impressive size, dignity and beauty of this the first nobility of the world's plant kingdom. It is altogether too commonplace, and should be replaced.

One method of choosing the most fitting common names for the trees would take account of the region of their occurrence. Assuming that "redwood" should be applied alike to both species, the names "Coast" redwood and "Sierra" redwood may well be taken into consideration as appropriate, since they designate the geographical distribution of the two species, and the former name is already commonly employed. The adoption of "Sierra" redwood would, however,

Common Names of the Sequoias (Cont.)

deprive the species of a descriptive name already somewhat used. The name "giant" redwood is by no means inappropriate, in view of the impressive size and majestic proportions of the species; but, are not both species veritable giants--the one a giant and the other a big giant? Although the choice of this name as a substitute for "bigtree" would, in the judgment of the writer, be an improvement, yet, in view of the immense proportions of both trees, it would not seem to be the best name.

Accordingly, it is desired here to raise a question as to the suitability of the present official common names, to urge a free expression of opinions held by those interested, and to propose the names "Coast redwood" and the "Sierra redwood," as being both pleasing and adequately descriptive of the homes of these big brothers.

Out of the Tall Timber

Lumber for Movies: Between 20 and 30 cars of lumber and from four to six cars of wallboard are used annually by one of the large New York motion picture companies. This company maintains its own storage sheds and operates its own planing mill and carpenter shop. Lumber is always purchased in the rough.

In the production of Sir J. M. Barrie's story, "Sentimental Tommy," a village was constructed consisting of 20 buildings, full size and furnished inside and out. It cost the company $45,000 to build this village, and 60,000 feet of lumber was utilized. The working time was six weeks, but the set was actually used only ten days.

Lieut. William Devoe Coney, Army aviator, who started from Pablo Beach, Florida, on March 25, to make a one-stop flight from the Atlantic to the Pacific, fell with his plane near Crowville, La., and was so seriously injured that he died on March 30. According to a newspaper report from Sacramento, Calif., Lieutenant Coney was a member of the aerial fire patrol last summer, and was at one time adjutant at Mather Field.

New Pay Schedule: Senator Reed Smoot of Utah is said to have prepared a bill for the reclassification of employees of the Government, which will be introduced at the opening of the next session of Congress.

The Smoot bill will fix new wage standards for all employees, and will place all employees doing similar work in the same classification. Salary scales, on the whole, will be increased by the terms of the bill, but wages for several classes may be reduced.

That the passage of reclassification legislation will put an end to the payment of salaries from lump sum appropriations, at the will of Bureau chiefs, is the hope of Senator Smoot and other Senators interested in the matter. It will also put an end to the bonus system.

The Smoot bill will be much simpler in form than previous bills of a similar nature that have been introduced. It is said that in drafting the bill the increased cost of living, higher wages paid in private industry for work similar to that done for the Government, and many other factors have been taken into consideration.

Deforestation and Famine: China to-day faces one of the worst famines in her history. Approximately 15,000,000 people are in imminent danger of starvation. The area affected is some 100,000 square miles in extent; and because of primitive means of transportation it is impossible for millions of the miserable inhabitants to get out of the stricken districts. Thousands upon thousands are dying daily, and the American Red Cross is feeding 150,000 persons, employing them to work on the roads.

The immediate causes of the famine were disastrous floods followed by long periods of drought, which resulted in the complete failure of three successive crops. These calamities, in turn, were caused in large part by the reckless wastage of natural resources. The Chinese have been extremely unscientific and wasteful in the handling of their forests. Agricultural lands of the lower plateaus were stripped of tree growth probably centuries ago, but until within even a hundred years ago great forests covered the mountain plateaus of central China. These have been utterly destroyed and no attempt made at either natural or artificial reforestation. As a result, the slopes have been so eroded by heavy rains as to be veritable deserts. Moreover, the lack of forest cover on the uplands has made possible the very factors that have brought disaster to so many millions of people in China this year. Human folly and shortsightedness have made a rough territory, fertile enough to maintain a population of over 50,000,000 people, into a place where men must ever be haunted by fear of destruction.

Through Life's Windows: Tests have shown that out of every one hundred impressions which reach the intelligence of man, 87 come through the eye. These figures indicate that we live the greater part of our time in the world fed through life's visual windows. Are we making the most of this tendency on the part of the average person to live in the eye-world, or are we attempting to "show" him through his ear, which only receives 7 per cent of impressions? All this may seem dark and mysterious, but the big idea is: Are we selling forestry and the Service to the public in the best, most up-to-date manner?

Motion pictures, illustrated lectures, news items, and stories naturally come first to mind in this connection. In such work we are just starting; the field lies all before us. What we need most is to get a full-sized idea of what these educational and publicity mediums mean, and what should go with them. Once the fundamental requirements are sensed--and they will be different in every locality--the Forest officer will find himself in possession of a market worthy of his best efforts. Seeing, after all, is knowing.

The Legislature of the State of Washington, before March 11, passed a bill providing for protection of timber in the storm-swept portions of the Olympic Peninsula. This bill appropriated $100,000, which will be spent under the direction of the Governor in perfecting rules and regulations to protect and preserve the forests and the down timber from damage or destruction by fire. The bill places the spending of this money in the hands of the Governor, who is authorized to appoint such agents or employees as are necessary to carry out the provisions of the act. Owing to the emergency the act becomes effective immediately.--West Coast Lumberman.

Canadian Foresters to Study in Europe: The appreciation of the Quebec Government of the necessity for the practice of forestry on its nonagricultural lands, and of the need for thoroughly trained foresters to make its programme effective, has recently been further evidenced. Four of the employees of the Provincial Forest Service have been sent to Europe by the Provincial Government, to spend a period of six months in making advanced studies of forestry practice and forest utilization in France, Belgium, Switzerland, and Germany. One of the men will extend his studies to cover a period in Sweden. Among the lines of investigation to which particular attention will be paid by these men will be methods of lumbering, saw-milling, silvicultural practice, reforestation, aerial photography, forest research, wood technology, and wood utilization, including the development of markets for hardwood species through small wood-using industries.--Clipped.

Washington Notes

F. A. Silcox, former District Forester, Missoula, Montana, who has been quite ill since January 1, is now at Charleston, S. C., (No. 11 Water Street) convalescing, and expects to return to his work at Chicago in about a month.

Visitors: Charles F. Bliss, formerly Forest Assistant and Forest Examiner on the Pike, Medicine Bow, and Cochetopa National Forests, D-2, now employed by the U. S. Biological Survey with headquarters in Albuquerque, New Mexico.

"Family Meeting" of Washington office employees was held on March 25, at which an illustrated lecture on "Aerial Fire Patrol as Seen from the Air," was given by Forest Examiner C. W. Boyce.

Merry Spring that has been gamboling among the flowers and green grass of the Capital received a severe shock on March 29, when the temperature dropped 62 degrees in half a day to 26 above zero, causing great damage to fruit trees and ornamental flowers and shrubs.

FOREST PRODUCTS LABORATORY

Split Posts and Round Posts: A question frequently asked of the Laboratory is,--Are split fence posts as good as round fence posts? The fact is, one will last about as long as the other if the percentages of heartwood and sapwood are the same in both. But if the percentage of sapwood is increased by splitting, the split post will be less durable, and if the percentage of heartwood is increased, it will be more durable than a round one. Exceptions should be made if the posts are of spruce, hemlock, or any of the true firs, whose heartwood and sapwood are about equally durable.

When posts are to be treated with creosote or other preservative, a round post is preferable to a split post, because of the comparative ease with which the sapwood can be treated. The heart faces on split posts do not, as a rule, absorb the preservative well.

Righting the Apple Cart: The apple cart is always being upset on its way to the market stall. Just now it is a certain style of bushel box, in which apple growers are accustomed to ship their fruit, that too often spills or severely bruises its contents before the market is reached.

Recently several of the standard apple boxes, packed with fruit as for shipment, were tested in the revolving box-drum at the Laboratory. Before they had gone a "journey" of average length in this machine, most of the boxes had burst open, and the drum was dripping cider.

It was noticed that usually the parts of the box first to loosen and give way were the four nails holding each edge. Two more nails were therefore driven into each nailing edge of the remaining boxes. With this simple change the boxes stood twice as much rough handling.

Inadequate nailing is the chief fault of most boxes examined by the Laboratory. A few more nails would save shippers millions of dollars annually.

Making One Tree Do the Work of Two: Better utilization of forest products was one of the major subjects for discussion at the Wisconsin State Forestry and Development Conference held March 28-29 at Milwaukee. Director Carlile P. Winslow in an address before the Conference described the aims of research in forest products as follows:

"While we are cutting at the rate of 4 to 5 times our national annual growth, we are, at the same time, using in the finished product only from 1/4 to 1/3 of the raw material available and cut in the forest. The problem on which the Forest Products Laboratory is working is how to put to efficient and economic use the enormous quantity of waste amounting to 3 and 4 times as much material as is in the finished product. In other words, how can one tree be made to do the work or produce the wealth formerly procured from two or even three trees?

"The possibilities in this field are tremendous and far-reaching in their effect upon conserving the present and future supply of timber, in making the growing of timber a profitable business venture, and in the reduction of costs in the wood-using industries, with corresponding ultimate reduction of prices to the consuming public."

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Early Fire Hazard: The season throughout the District is fully a month ahead of normal and already it has been necessary to put on emergency fire guards on the Michigan Forest, while one of the Rangers on the Pike has had to take charge of a couple of fires just outside the Forest boundary. Unless we have a repetition of the 1920 spring, during which it rained and snowed most of the time, it is evident that we are in for an unusually heavy fire season.

Good Ranger Headquarters Go Begging: Evidently the average Ranger does not crave luxury. Recently we offered to about a dozen of the old Rangers an opportunity to transfer to a district on the Pike Forest with headquarters consisting of a fine nine-room house, equipped with running water, bathroom and toilet; but we were unable to awaken any interest. It is possible, of course, that the woeful experience of Ranger Thomson of the Montezuma has deterred most of them from wishing too close association with a bathtub. Thomson, while on detail to Denver last winter, slipped and fell while in a tub, throwing his knee out of joint so he was required to wear it in a plaster cast several weeks.

Resolution: WHEREAS, the livestock industry is already suffering from excessive charges in addition to the depreciation in value of stock.

THEREFORE BE IT RESOLVED, by the North Park Stockgrowers Association at their meeting, held at Walden, Colorado, on the 10th day of March, 1921, that the present grazing fees of from 40 to 60 cents per head is now too high and that instead of being increased should be reduced in proportion to the reduced values of livestock, and that we endorse the stand taken by the former Secretary of Agriculture, and the Forest Service, in opposing any increase in the fees at this time.

Request Reduction of Freight Rates: The Colorado Stockgrowers' Association, at a meeting of its Board of Control, on March 22, heard a report from a special committee asking for a reduction in freight rates from all points on the Western slope of 25 per cent, the amount which was added to the rates on August 26, 1920. This petition asks for a hearing before the State Utilities Commission and it is expected that it will go from there to the Interstate Commerce Commission. While the amount will mean only $35 or $40 per carload of cattle, the stockmen are taking the position that it is absolutely necessary to cut at every corner in order to break even on the livestock game.

Rangers Approve Cost Keeping: The Rangers of the Holy Cross, Leadville, Routt and White River National Forests, held at Glenwood Springs, Colorado, February 8-12 adopted the following resolution:

"That in view of the Forester's need of more intensive cost figures for administrative purposes and to present the needs of the Forest Service to Congress; we cheerfully accept the increased work of keeping costs in a way that will meet the need and will familiarize and carry out instructions for time distribution to the end that the results may be dependable for accuracy and uniformity."

Ranger Bill Says:

The tall timber calls a lot louder than big salaries to a good many of us fellers.

Since the Lab. discovered sawdust was good cowfeed, I've been pasturing Old Bess up at the mill set.

One of the Mist twins--either "Opti" or "Pessi"--is free boarder at most Ranger Stations.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Lincoln Fire Education Plan: A plan that promises to arouse much interest among school children in forest fire prevention and in the education of the children as well as their elders in this important subject, has been devised by Supervisor Arthur of the Lincoln Forest. The gist of the plan is a competition between schools in the timbered areas on and near the Lincoln in forest fire prevention, based on a system of merits, the prize for the highest rating for fires extinguished or reported being a U. S. flag 5 x 10 feet.

Clean Up on Advertising Signs: "There are not as many advertising signs in the Coronado National Forest to-day as there were a few days ago. Supervisor Calkins and Frank Grubb of the Forest Service returned from an inspection trip to the Catalinas yesterday and said that they found several large and unsightly signs advertising various articles had been erected. The signs were removed."

Prehistoric Forest Fire Evidence: Scaler Perry of the Carson Forest has submitted charred specimens of wood and bark recovered by him from alluvial sands below La Madera, N. M. The specimens were evidently buried many feet deep under these sands and have lately come to light through weathering action. The specimens are of particular interest because they are of a tree species different from the woodland type prevailing for many miles in each direction from the spot where found. The specimens have been sent to the Madison Laboratory for identification.

Recreation Area for Albuquerque: Engineer Hughes has just completed a piece of road one-half mile in length that opens up an attractive picnic area on the Manzano Forest easily accessible by automobile from Albuquerque, 18 miles distant. The area is located near the town of Tijeras in a small timbered tributary canyon to Tijeras Canyon and just below San Lorenzo Falls. Parking for automobiles is provided and a short trail up the Canyon will be constructed leading off from the terminus of the new road.

Spanish Forester Visits Coconino: "Senor Jose Elerrieta, Director del Servicio Forestal de Viscaya, spent a couple of days recently with members of the Coconino. He was primarily interested in the experimental work that is being done in this country and was studying the results of planting at the experiment stations, the species that were being successfully propagated, etc., with a view of learning something that will be of interest to the Spanish Forest Service. While here he spent a part of a day at the Ft. Valley Experiment Station."

Forestry Legislation in New Mexico: The New Mexico legislature has recently passed a bill which will be of much interest to the Forest Service. Among other things it provides penalties for setting forest fires and for leaving camp fires unextinguished, requires persons desiring to burn brush during May, June, and July to give 24 hours notice to owners of adjacent lands, and declares any uncontrolled forest fire within the State a public nuisance.

Another bill which passed the New Mexico legislature on March 8 provides for the retention of the State timberlands in State ownership and for the practice of forestry by the State on these lands. Under the terms of this bill the State may also cooperate with the Federal government in the practice of forestry.

Livestock Sent to California Because of Drouth: "Because of the protracted drouth, that is causing an alarming shortage of stock feed in many sections of the southwestern range, shipments of feeders, and especially calves to the California range from southern Arizona are being reported almost daily.

"Two shipments of calves were made Monday from this section. One movement to California, of 2,000 calves, was made by the Aravaca Land and Cattle Company, while another large shipment to the California range occurred the same day from La Osa Livestock and Loan Company's ranch."

Clovis Seeking Community Recreation Area: Mr. D. W. Jones, Secretary of the Clovis Chamber of Commerce visited the District office recently on business in connection with the plan of the city of Clovis to establish on some nearby National Forest a community recreation area. The Pecos region on the Santa Fe appeared to be the most logical place for this project. Communities with a total population of 20,000 in that region will be included in the project. From Clovis the Pecos can be easily reached in a day's drive by automobile over good roads by way of Ft. Sumner and Santa Rosa.

Roswell Recreation Project: "Final report of the survey made by Mr. Burrall, of the District Office, of the Pine Lodge recreational area has been received in this office and action is now being taken on applications for the main municipal area and on 40 applications received from the citizens of Roswell for individual summer home sites. If this action results in the final issuance of permits it will net the Lincoln an increase in receipts amounting to approximately $600.00."

Dry Mill Set: "An opportunity is now afforded for the study of the feasibility of gas engines for power for sawmills on dry sets. H. T. McCurdy is installing a 35 H.P. Hassell oil or gas-burning engine.

"Early in December the water supply at the mill became short and finally almost disappeared by early February, causing a total shut-down. It was decided to try out a gas engine and after looking over numerous types, the Hassell made at Colorado Springs, Colorado, was decided upon.

"According to McCurdy, who has seen the engine work, it will enable him to put out on an average 500 ties per day, (if he can keep the rest of the mill together), as compared to about 200 with steam boilers heretofore."

New Wages in Sheep Industry: "Supervisor Scott attended the midwinter meeting of the Arizona Wool Growers' Association held at Phoenix on February 5. At the same time a meeting of the Tusayan Advisory Board was held to discuss various matters affecting this Forest. A maximum wage of $45.--per month for sheep herders and camp tenders was agreed upon by all members of the Association to become effective June 1. The Association also agreed on a price of 10 cents per head for shearing.

Speaking of Field Trips: The Books of History by Confucius tell of one field trip by the engineer Tauy along about 2200 B.C., that is a classic. Forest officers need not hope to beat this record for hitting the high spots in the field and long continued absence from the home fires. The cause of this trip was the necessity for rebuilding the flood control works of the Hoang River after a disastrous flood that occurred that year due to deforesting of the headwaters of the river. The successful completion of the task resulted in the elevation of the name of Ta-uy to the top ranks of China's long line of national heroes and the fame of his name and works is kept alive to this day. Incidentally, this engineer developed fundamental methods of hydraulic engineering that are followed to-day, over 4,000 years later. The task took thirteen years and according to the history "thrice in this time, Ta-uy passed his own door without even staying to caress his child."

Twenty Dollars per Trout: Five fish cost R. E. Putney and his son, R. E. Putney, Jr., prominent business men of Albuquerque, $100 which was paid in a Justice of Peace Court at Bernalillo, New Mexico, on March 15. Five days before this Forest Ranger Bascom Brown of the Santa Fe Forest came upon the Putneys on the East fork of the Jemez River engaged in a most popular June pastime about 90 days before that month. Brown seized the fish and arranged for the trial with the above result. The Putneys pleaded guilty to the charges and in each case paid the minimum fine and costs. As an Albuquerque paper remarked: "three months later these fish would have cost them nothing."

Deer Perish Trying to Reach Water: "It is so dry in the Cannille hills that even the wild animals are suffering for want of water, according to Deputy Forest Supervisor McKenzie who returned from a trip to the Huachuca reserve to-day. Mr. McKenzie said that he found the bodies of six deer in an abandoned shaft. The deer had probably slipped in trying to reach water at the bottom, he said. There were two large bucks among them he said. The shaft was filled with cordwood to prevent others from falling in."

DISTRICT 5 - CALIFORNIA DISTRICT

Signs Marring Road Beauties: "Signing and Unsigning our Highways" is the subject of an interesting article published recently in a leading motor publication. More than half of the article was given over to a discussion of "unsigning" the highways.

Road unsigning must go hand-in-hand with road signing, for unless the last is accomplished, and thoroughly, the first, in thousands of instances, will be useless.

This promiscuous placing of advertising matter on our highways must cease. Tourists by the thousands come out here to see the beauties and wonders of nature, which they have been told are to be found in our big playground. It is a shame that our scenic wealth must be marred by unsightly signs.

So take cognizance on your next week-end run of the spots where most of the signs are placed. On the trees at a foot of a waterfall; at the point where a grand panoramic view may be had; down in that gorge your vision is centered on a painted ad for some sort of bitters or other patent medicine, lettered on a shelving, smooth-face rock. You come to a prominent road intersection, lined perhaps with stately firs or pines, and you look for some direction sign, only to find it hidden midst a conglomeration of aged advertising posters, until it has become necessary to place them on top of another. That pretty bridge over one of your favorite stopping places is plastered with these scabs.

Some day, let us hope, legislation will amend this condition of our fine highways.--S. F. Examiner.

We do not believe that these conditions prevail on the National Forests of D-5. The placing of advertising signs upon or over the State Highways of California is a misdemeanor and is punishable by law.

This Boy Scout On the Job: Lee Merrill, a Boy Scout belonging to Troop No.9, Pasadena, recently got into his head to do a little forest fire prevention propaganda on his own hook. He straightway went to Johnson's Shoe Repair Shop, which is the largest institution of its kind in Pasadena, and talked the proprietor into having the slogan "Help Prevent Fires" printed on their redemption tags which are given out when shoes are left for repairs. Merrill says this repair shop issues about 500 repair tags a week and figures that the slogan will reach a lot of people this way. Ranger Mendenhall is not sure what this Scout will spring next, but is sure that the lad's activity, if properly steered, will make itself felt in the fire prevention campaign.--Angeles S.W.A.

California May Have Compulsory Fire Patrol: There is a possibility that California may have a compulsory fire patrol law before long. A bill along the lines of the patrol law in Oregon has been proposed to be introduced in the second half of the session of the California Legislature by the Forestry Committee of the California Automobile Association. This bill has been brought to the attention of the State Board of Forestry, which has requested an opinion regarding its necessity from the pine and redwood manufacturers and the California Forestry Committee. The District Forester has written the Pine Association that if 100 per cent voluntary cooperation can not be obtained in this State in fire protection, it is his opinion that such a law as has been mentioned is necessary.

The Work of Vandals: The word vandal (meaning one who defaces a F. S. sign) is derived from the name given certain tribes who used rough neck methods after capturing a town. It was their pleasant custom, this is along some 300 or 400 A.D., to tear down monuments and deface what they could not wholly destroy. Their methods were not original, however, as it seems that Persian monarchs, 500 or 600 B.C., used to place fulsome curses on the monuments scattered throughout the land directed against those who might deface them or make the inscription illegible. Our system in this enlightened age is not as good; we indulge in our fulsome cursing after the defacement.

Mount Whitney Moved: The transfer of the Mt. Whitney District of the Sequoia Forest to the Inyo for administration has been made. This increases the area of the Inyo by some 440,000 acres and transfers one district ranger, five short-term fire men, and about 6,700 cattle to that Forest. Mt. Whitney also becomes one of the wonders of the Inyo and it now will be up to that Forest to maintain the claim of the peak of being the highest in the United States against anything the advocates of Mt. Shasta or other more or less lofty mountains have to offer in this line.

Grazing Trespass Damages: On November 6, 1920, the Circuit Court of Appeals, Eighth Circuit, in the case of Baldridge vs U. S., 268 Federal Reporter 821, decided that where a trespasser's cattle had consumed grass belonging to the plaintiff, the rental value of the land, as a measure of damages for the value of the grass, was not admissible in evidence. The plaintiff attempted to show that the fair and reasonable rental value of the land upon which the grass was growing was the value of the grass converted. The Court said that the action was for damages for the conversion of property, and not one for the wrongful occupation of the land. This involves a distinction between personal property and real property.

It would be difficult, in our grazing trespass cases, to show the value of the grass, and evidence of rental value of nearby lands would be inadmissible. Future cases will no doubt have to be based on the wrongful use and occupation so far as court action is concerned.--H.P.D.

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"The other Greeley advised us to go west young man and grow up with the country, but W. B. urges us to plant something so the country may grow up."--American Lumberman.

DISTRICT 6 - NORTH PACIFIC DISTRICT

A Wanderer: Chas. J. Kraebel, now Assistant Superintendent of Forestry in the Hawaiian Islands and formerly of the Wind River Experiment Station, recently while walking along the windward shore of some tropic isle found, among the driftwood, a piece of Douglas fir bark, with the scars of an old forest fire still plainly blackening the outside. He stooped and seized it, and it brought back to him visions of the forests of the Northwest, of Wind River Valley, of the Cascades; he writes that it was thrilling.

Foreign Visitors to the District Office during the month was Prof. H. Ueki, Professor at the Government General Agricultural and Forestry College, Suigen, Chosen (Korea), who came with Mr. T. Takamatsu, Professor of the Keijo Law College, and T. Midzuseki, Assistant Secretary of the Japanese Consulate in Portland, who acted as interpreter. Prof. Ueki is especially interested in dendrology and asked many questions in regard to our native trees. He particularly marveled at the variety and magnificence of the conifers.

Juniper Pencils: Specimens of finished pencils made from western juniper (*Juniperus occidentalis*) have been received in the District Office from Forest Supervisor Plumb of the Deschutes. The slats from which these pencils were made were manufactured at Bend, Oregon. In comparison with the eastern red cedar, the western juniper appears less dense, as evidenced by the fact that the fibers broomed up a little when sharpened in the pencil sharpener.

Service Trained: T. J. Torkelson, who has been associated with the Seattle Laboratory for about six months, left during February to assume charge of the Research, Employment and Cargo Mill Service departments of the West Coast Lumbermen's Association, Seattle. Torkelson is a graduate of the College of Forestry and Lumbering, University of Washington. Soon after graduation in 1917, he enlisted in the Marine Corps and later served as a Captain in several major combats in France. For his exceptional work and heroism he received the *Croix de Guerre* and citations from his commanding officer.

Coffin Wood: The Seattle Laboratory recently received a western red cedar coffin cover from the MacIntosh Truman Lumber Company, who have been selling this species to a coffin manufacturer for the manufacture of caskets. It was found that after the finished coffin had been standing for a few months that the white velour covering had become stained, very probably from the volatile oil of the wood. The Laboratory was appealed to for aid in overcoming this difficulty. It was suggested by a representative of the Laboratory that covering the wood with a thin coating of paraffin or a sheet of waxed or oiled paper before the cloth covering was applied would probably prevent the oil from reaching the cloth and causing stains.

Olympic Windfall an Event in Forest History: There is every reason to believe that the recent windfall disaster on the Olympic Peninsula was the most extensive and destructive which has occurred in the forests of America in several centuries. The severest windfall occurrences previous to this, of which we have knowledge, include that of a storm in the Gulf States in September 1909, which blew down over one-half billion feet of timber, and that of a violent storm in Maine in November 1883, which blew down 1½ billion feet. Winds that blow down some timber are common every few years, but violent storms like these with their attendant destruction are in the nature of a catastrophe like earthquakes and volcanic eruptions which fortunately occur only infrequently.--R. H. Weidman.

Heintz Treks North: B. F. Heintzleman, Forest Examiner in D-6 since 1910, left Portland on March 9 for Ketchikan, Alaska. He has just been promoted to Logging Engineer and transferred to D-8, the Alaska District, where he will have charge of all timber sale work for the new District.

Almost Worked: Ranger Vandevanter of the Siskiyou has this to say of plans: "Pretty nearly lived up to my January working schedule. A few unexpected jobs turned up, like range cattle breaking down a few sections of fence, but on the whole I pegged along pretty close to the plan. On my forthcoming plans, however, I'm going to put in the reservation, 'Subject to change without notice!'"

Alaska Timber Cruising: The story is told of a second mate on a passenger ship Alaska-bound from Seattle. There was a new quartermaster on board who was given the wheel by the mate. The Q. M. was given a course and told to stay on it, and the mate sat down and fell asleep. He was awakened by a crash. Said the Q. M.: "You'd better take her now, Mate! I'm not much good in the timber!"

Alaska Pulp A Reality: January 24, 1921, is apt to prove an epic date in Alaska's development. For on that day there was shipped from the Alaska Pulp and Paper Co's. plant on the Tongass Forest the first pulp ever manufactured in Alaska! It is believed to mark the beginning of the development of Alaska's forest resources. The pulp was manufactured at the Speel River plant and was shipped to San Francisco, the headquarters of the Alaska Pulp and Paper Company, where it will be made into paper. This Company was awarded a Forest sale of 100 million feet and began work on their power plant in June, 1920, and began to turn out pulp in January, 1921, at their small plant on Shrimp Bay.

A Friend of Paul's: Frank Johnson of the Colville country has the reputation of being the prize tie-hack of this region. His record is 140 hewed ties a day. He met all requirements, except peeling them. On one job, under contract with the Canadian Pacific Railroad, he averaged 80 hewed ties per day, for several months. He felled the trees, hewed the ties and sawed them up into the required length, but did not peel them. He used a 7-pound broad axe for scoring and an 8½ pound one for hewing.

Oregon Is Going to be Signed Up: Four hundred and thirty signs were turned out by the Oregon Forest sign shop this winter. A map is being prepared in the Supervisor's office showing the location of all signs now on the Forest and where new signs will be put up. At each point is a number on a list giving the wording carried by the various signs.

"Unclassified": Dear Supervisor. Do you read the Service Bulletin? If so, have you read the article in the Bulletin dated February 14, 1921, 'Eight Hours Unclassified?' How many Beaver stations have you on your Forest? If the ranger from Beaver Station had been on this station for ten years, he could not have explained the situation any better; there may not be a Mrs. White, or Mr. Green on every Beaver station, but if not there is always a Mr. or Mrs. Black, Brown, or Blue who will take up a Ranger's time and leave one not familiar with the circumstances to believe that the Ranger is killing time."

Fairs: The Forest Service is getting popular with exhibits. The Tri-State Auto Club asked for an exhibit at Walla Walla, Wash., on March 17-19, and Supervisor Kuhns of the Umatilla put one on. The Mountaineers of Washington have asked Supervisor Weigle to put on an exhibit at a show they plan for April 8, in Seattle. The Sportsmen's and Tourists' Second Annual Fair at Spokane on April 12-15 have asked Districts 1 and 6 to have an exhibit. The Commercial Club of Wenatchee and Chelan County Sportmen's Association have asked Supervisor Sylvester to add a Forest exhibit to a Sportsmen's Fair planned for April 7-9 at Wenatchee.

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Scaring 'Em Off

"What are you going to do about the people who want you to get them positions in the government service?"

"I persuade 'em to think twice," replied Senator Sorghum. "I send 'em copies of speeches made by members of Congress who think that workers for the Government ought to have their pay reduced at least once every six months."--Clipped.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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"SELLING" THE SERVICE

(The following is an extract from a memorandum written by a former Supervisor in D-6.)

"The more or less neutral attitude that the Forest Service has taken with the public has been largely responsible for the lukewarm support that we have obtained, and the lack of adequate appropriations. The public generally considers us as a nonentity--boys holding soft jobs consisting mainly of fire protection. It has only a vague idea of our accomplishments and policies. The majority do not know that we sell timber, lease land, build roads and trails, stock streams, protect city watersheds,--in short that the Forests are being developed for the benefit of the public as rapidly as appropriations will permit. The average man thinks that as we are a Government organization we can obtain any quantity of money we desire, and feel that lack of development is due solely to inertia on our part. This attitude can be easily changed to one of hearty support by the united efforts of our organization.

Our ideals and accomplishments should be widely disseminated through the medium of papers and magazines, and especially by closer personal relations with influential men in both private and public life. For example, each Supervisor should take out, or endeavor to meet on his Forest, one or more leading business men each season. He should make a personal effort to cause their trips to be more pleasant, explaining in detail what the Forest Service has and is accomplishing along with its policies and plans. In this way we will make a strong personal friend of the average man, and at least neutrals out of most of our enemies.

Bring it forcibly to the visitors' attention that we are both anxious and well qualified to carry on an extensive development work, but are so handicapped by small appropriations that comparatively little can be accomplished in any year. Also, that if the public will only support us we can obtain just as much money as any Department. We certainly can't get the money unless the public does support us.

Practically every man, no matter what his position may be, will appreciate such courtesies and personal efforts to make his trip pleasant. Newspaper men, especially sporting editors, bankers and other business men, automobile club officials, officers of Commercial Clubs, are all good material to work on. Every one of these that we win over will tell his friends and will usually defend us and advertise our policies. If this is carried on aggressively for a few years our standing in the State will be radically different from what it is now, and we will find that appropriations and support of all our major policies will come far easier.

The average man has a receptive mind, and if properly approached will fall hard for all activities which are clearly of public benefit. It is easy to appeal to local pride and betterment of the community by pointing out the advantages of, say, road construction, with large pay rolls, and then the influx of tourists which is bound to follow. Visitors are always greatly impressed with the magnificent timber and wonderful scenery, and the influx of money into the State from such sources in direct proportion to the extent of development. Lack of roads has been probably the greatest handicap in obtaining the tourist business which the character of the country justifies. ***

Look what the Interior Department has accomplished through its National Park Service in the way of advertising and development. Their organization is far smaller and younger than ours, yet they are much better known throughout the country than we are. They maintain an extensive advertising campaign in newspapers, periodicals, railroad circulars, and even supply each visitor to a National Park with proper literature. Every one quickly sees the need for development in the Parks, and the public enthusiastically supports them in demands for appropriations. It is my belief that the general public would visit the National Forests in even greater numbers than they do now if there were proper facilities for their comfort and convenience. I am sure, therefore, that we could get all the support desired if we go after it systematically.

My Little Dry Farm in the West

L. H. Douglas--D-2

The competition between the stockman who has grazed his stock on the Public Domain and the homesteader who settled on this domain was bitterly waged years ago. Areas of good soil, favorable altitude and abundant water were the first selected. There was no doubt about the value of the areas for agriculture, but they were also strategic units in the use of large expanses, more valuable for grazing than for agriculture. Sooner or later they were irrigated and became important in producing hay for winter feeding of livestock or grain, fruit and vegetable crops. To a large extent they came into possession of stockmen, or the homesteader became a stockman, and the western livestock industry gradually saw a change from the grazing of cattle and sheep yearlong on the open range to the feeding of the stock in winter. Although the homesteaders' fences were cut, his crops destroyed, his horses and milk cows driven off, he would not be denied, nor should he have been, because he was to put the land to its highest use--for agriculture.

Then came the second phase of homesteading--the settling on land which could not be irrigated and the attempt to dry farm. Again the range livestock business was interfered with, and rightly too, in all instances where conditions gave promise of reasonable success of dry farming because in the end as much, if not more, livestock would be produced on the successful dry farms as on the area thus taken away from the open range. But the attempt to dry farm has been carried to an extreme which could scarcely be attended by success. Land at too great altitudes and of poor soils, having all the ordinary disadvantages of dry land in farming has in addition the short growing season and the long season of snow and difficulty of cultivation.

A meeting was called at Logan, Utah, last August by the Utah Agricultural Experiment Station for consideration of ways and means of increased attention to the problems of open range and large pasture grazing. The meeting was attended by representatives of the Agricultural Experiment Stations of several western States and by others interested in the livestock grazing problem. The outstanding feature of the meeting was that the Agricultural Experiment Station men took themselves to task for spending their efforts almost wholly on problems of the raising of cultivated crops and for neglecting what they now insist is an activity almost, if not quite, as important--namely, the open range or large pasture grazing business. It appears that they had been led to this conclusion by their work in forwarding dry land farming. In other words, they had come to a realization that enormous areas in the west never would be successfully dry-farmed and that such land would serve its highest purpose as grazing land; and, furthermore, that nothing had been done (except by the Forest Service, they said) to learn and point out the need for and methods of correctly handling grazing lands. They resolved then and there that less attention should be given by Agricultural Experiment Stations to extension of dry farming and more to the correct management of grazing lands.

Their humorous and pathetic stories about the experiences of dry farmers suggests this parody:

My Little Dry Farm in the West (Cont.)

When the baking sun sinks o'er the hills,
And the toil of a long day is o'er,
Oh, the crop is so light
And no rain is in sight,
So I'm doomed to earn wages once more.
And, Alas, I'm discouraged and blue,
And I have no contentment and rest;
What the 'hoppers don't get,
The blamed hail will, I'll bet,
On my little dry farm in the west.

There are wet years that beckon me on,
But the dry years come three in a row,
And I sure can't win out
At such odds in the bout
With the drouth, cold and snow for my foe.
It's a corner of Hades itself,
It's the bane of my life and a pest,
And with grief brooding there
Nothing else can compare
With my little dry farm in the west.

Rotten 'Rithmetic

The Annual Statistical Reports, as submitted by Districts 1, 2, 3, 4, 5, and 6 for the year 1920 contained unusually numerous errors and discrepancies. Delay and extra work all along the line resulted. Many letters and telegrams were exchanged before the reports were finally completed. District 7 has been omitted from comparison because the annual statistical reports are submitted by Supervisors direct to the Section of Computing, without compilation by the District office. (Oh, yes, the D-7 Supervisors made errors too!).

The following table gives roughly the number of errors for the various reports. It looks as if our educational courses should include one in elementary arithmetic!

Reports	Districts					
	1	2	3	4	5	6
	Number of Errors					
Operation						
Improvements	29	68	11	13	13	56
Trespass	_	_	1	_	_	3
Silviculture						
Timber cut and sold	_	2	_	_	_	_
No. timber sales	1	_	_	_	_	_
Timber survey	1	_	1	_	_	4
Free Use	1	_	_	_	_	_
Nursery	_	1	_	_	_	_
Grazing						
Grazing	12	1	3	9	2	24
Range Reconnaissance	_	_	_	2	6	_
Lands						
Reserved Sites-- Adm.	_	_	_	5	_	_

Rotten 'Rithmetic (Cont.)

Reports	Districts 1	2	3	4	5	6
Lands	Number of errors					
Agricultural Settlement	–	1	–	4	2	–
Special Use	3	31	31	–	–	–
Fire	–	–	2	–	–	–
Personnel	–	–	6	6	–	–
Total	47	104	55	39	23	87

--J.Kittredge.

Horse Sense

By E. B. Spencer--Cache

Do you know that a horse's efficiency can be impaired at least fifty per cent by improper feeding and care? It makes no difference how good a horse is to begin with, if he is given improper care to a sufficient degree, he won't be much of a horse. Many a mighty good saddle horse has his performance cut squarely in two by the way he is handled, used or fed. Are you guilty of any of the following?

(1) Do you leave the same shoes on your horse without resetting more than six weeks at a time? If so, you are not giving your animals a square deal. Shoeing establishes an unnatural condition of the feet by preventing them from being worn through travel. As the toe becomes long the horse has a tendency to stumble. The growing out of the hoof also prevents contact of the frog with the ground, which is necessary if that part of the foot is to remain healthy. It is an axiom among horsemen that a horse is no better than his feet. Frequent resetting of shoes extends the period that a horse will retain good feet.

It is a great thing to pull your saddle horse's shoes off in the winter time and as long as there is any snow on the ground, ride him barefooted.

In connection with the care of the horse's feet, I know of nothing that will do a horse more good than to let him run out and rough it through the winter unshod and unsheltered except what shelter he can find in the leeway of an open shed or haystack. I don't mean by this that he should not be fed plenty of roughage; but I do think that if a horse is not being used regularly and you can get along without him, that his period of usefulness will be increased and he will be a better horse for running on the snow unshod and roughing it through.

(2) Do you jam a horse's legs by riding him down hill, even though it is but a slight grade? If it is necessary to ride a horse down a hill, ride him slowly except in case of an emergency. A person who will ride a horse down hill at a more rapid gait than a walk when it is not necessary, is either a knave or a fool. If you do not believe that sort of thing is hard on a horse, put a pack of two-fifths of your own weight on your shoulders and then jog down a hill. It is understood that many riders consider it beneath their dignity to dismount and lead their horse down a hill. That's all right, it's them for it, but if you own and ride a saddle horse that's worth its keep, it is certainly worth while leading him down steep hills, and riding him at a walk down hills that are not so steep as to make leading him desirable.

(3) Do you, just a few hours or possibly a day or so prior to a hard ride, cram the oats into your horse? If you are guilty of this you are accomplishing just the opposite result from that which you contemplate. Indigestion, stoppage of the alimentary canal, or diarrhea almost invariably results from feeding horses in this manner. Feeding grain in excessive amounts is bad at any time, no matter how hard a horse is working.

Horse Sense (Cont.)

The amounts of grain that a horse can be fed safely which will give the greatest returns in increased endurance and energy by the animal, have been pretty well established by experiments made in the U. S. Cavalry and at different agricultural colleges. When a horse is doing heavy work practically every day, he does not need and should not be fed more than one pound of grain for each 100 pounds of his own weight, and this grain should be fed in not less than three feeds if practicable, which should be given at regular periods.

(4) Do you feed and water your horses regularly? A normal horse, like a normal human being, will do much better if regularity is observed in the matter of feeding. Water them regularly, at least twice in twenty-four hours. Feed them hay regularly. A horse will thrive much better if he is fed a little fresh hay three or four times a day in quantities that he will clean right up each time.

If you are feeding grain, it is better to feed it three times a day unless the horse comes in at noon heated up and the noon period is of short duration, in which case much grain should not be given. If the hay is of first class quality, 25 pounds a day for a 1,000 pound horse is ordinarily sufficient, although the amount varies somewhat according to the individual animal. Good, clean oats are better than any other grain for horses.

Anyone that has had anything to do with horses knows enough not to water them when they are warm. If a horse is gentle his temperature can best be determined by laying a hand inside his thigh where there is no hair, and if he is damp or hot to the touch, don't give him any water and don't stand him in a draft.

Pay attention to the condition of your horse's back. Keep your saddle blanket clean. The best blanket ever used by the writer was a quilted horsehair pad which was placed next to the horse's back and on top of which was used a single Navajo blanket. The hair pad can be washed out frequently, which restores its resiliency.

Pay attention to your horse's mouth. If he slobbers excessively when eating his grain or when bitted up, he has a sore mouth or bad teeth, nine cases out of ten. Horse's teeth wear a great deal and in the process of wearing, almost razorlike edges are developed on the sides of the teeth. This is so painful to the animal that he can not properly masticate his food. In a short time the horse may begin to fail in flesh even though he is being grained heavily. When these symptoms are observed, take the horse to a "vet" or some person who has a device called a speculum, and which with an ordinarily gentle horse, can be put in the mouth by putting a twister on the animal's nose. If ulcerated or other teeth are discovered that are the cause of the horse's condition, they can be extracted or filed.

The time the ordinary rider is able to devote to grooming is not great. Horses running loose night and day in a pasture don't need to be groomed except as far as it improves their outward appearance. If a horse is kept tied up in a stable he should be groomed every day.

Keep your stables clean. Don't let the horse ruin his feet by standing in filth. Keep the floor of his stall as dry as possible; don't force him to lie down at night on wet boards. Use some kind of bedding, a little at least, even if you have to take a little hay and bed him.

Be fair to your horse; make him work and ride as hard as necessary; but in doing so, give him every advantage that you can and you will find it pays big returns. When he has served you faithfully and his period of usefulness is past, don't turn him out to starve, or dispose of him to some horse-killing "curse," but be man enough to take a small monetary loss and lead the old faithful brute out on some side hill and give him a 30-30 through the forehead, midway between his ears and his eyes. There is no sentiment or sense in allowing a faithful animal to eke out a painful and precarious existence.

"When a Feller Needs a Friend"

By W. C. Barnes--Washington

"I was in Italy last fall," remarked Dr. Howard of the Bureau of Entomology recently, "and mighty anxious to get back to this country. Having your passport vise-ed is one of the big jobs on that side, and we were early at the office of the American consul in Nice, from which city we were to sail."

"At eight o'clock in the morning we found a long line of anxious people standing before the building. They were of all sorts, old and young, male and female, and of many walks in life. We waited a while and concluded to try it later in the day. After lunch we found it even worse, and as the job had to be done soon decided this time to stay with that line until our turn came, if it took the rest of the week. It was a red-hot day, and everyone was feeling cross and disgusted when a fine, well-set-up chap dressed in a natty snow-white uniform came along the line 'looking us over', my friend said. When he came to me he stopped, extended his hand, and said 'Aren't you Doctor Howard from Washington?' I hastened to assure him I was, meantime wondering where in San Hill I had ever seen him before. Certainly a man ought to be able to recall that handsome, boyish face with a friendly quizzical look in the eyes. He saved me much embarrassment. 'My name's DuBois, used to be District Forester in San Francisco, and you were out there running down pine beetles for us. Have a cigarette.'

"Let me tell you I never was so proud of an American before in all my life," continued the Doctor, "nor more pleased to see one. He took us out of that line, slipped us into the consulate by a side door, and the first thing we knew we were sitting before a table in a cool room with some tall glasses before us filled with certain comforting, soothing liquids that can no longer be found in Washington. Meantime a clerk took our papers from us, and almost before we were done with the glasses they were handed back to us all fixed up for our leaving. Would there were more of his kind in our foreign service!"

Grand Rapids Rival

By Ira T. Yarnell--Boone

In preparing timber management plans it is essential to provide a continuous supply of raw material to industries dependent upon timber resources. On the Wilson Creek Working Circle of the Boone Forest there is now established a furniture factory that is unique in many respects. There is not a wagon road to the factory and all supplies and finished products must be moved over sled roads; power is secured by harnessing the water supply; and the finished product is made entirely from forest resources, with the exception of nails.

This region was cut over ten years ago by a large logging operation. Due to a scattering stand, hickory and maple were not taken. Some white oak and ash were also left on inaccessible areas. This factory which deals entirely in the rustic type of chairs uses exclusively the above mentioned species. It is especially desirable, from a management viewpoint, in thus utilizing undesirable "hold-overs."

A description of the conversion of the raw material into the finished product is of interest. Two brothers compose the pay roll and a yoke of oxen the livestock. After cutting the timber, it is "ball-hooted" down the steep slopes to trails where it is cut into bolts and carried in a homemade sled drawn by oxen. At the factory, which is constructed of logs and covered with slabs, the bolts are cut into squares and allowed to season. All legs, posts, and rungs are turned on the lathe, the bent back posts and the curved backs are steamed and then shaped in handmade presses.

The chairs are assembled without the use of glue, since all parts fit close after they are pounded into place with a heavy mallet. Ten small wire nails hold the curved back pieces in place. The seats are woven by hand out of splits made from white oak. The chair is sold without any filler or paint and retails at $1.50 at the railroad. They must be sledded four miles to the shipping point.

Chairs of this type made by the father of these men have been in constant use for over 20 years and are in good condition to-day with the exception that the legs have been worn off at least one inch by sliding around the floor. It is this type of chair that is found in the mountain homes to the exclusion of the "tailor-made variety." At present this factory holds the distinction of having sufficient unfilled orders to run at full capacity for at least one year.

South Dakota Governor Visits the Black Hills

By T. H. Gill--Black Hills

On March 31 the Honorable William H. McMaster, Governor of South Dakota, was taken on a tour of inspection over the Boulder Park road in the Black Hills National Forest.

This road in its present condition is impassable during the spring and winter, but when completed will be of great importance in administering the Black Hills Forest since it lies almost wholly within the Forest boundary and will be the main trunk east and west within the Northern Hills.

A short time ago Supervisor Duthie went to the State Capitol to interest the State Highway Commission in the construction of roads within the Black Hills Forest. At this time he secured the consent of the Governor to visit Deadwood. March 31 was agreed upon.

The Roads Committee, of which Mr. Duthie is chairman, decided that to conduct the Governor over the road would be more convincing than long speeches, or, as Duthie put it, "a foot of mud is worth yards of pow-wow." The plot then developed into meeting the Governor and the Secretary of the State Highway Commission at Sturgis, and bringing them over the road to Deadwood, the eastern terminus.

Snow fell on the 28th and 29th, and less adventurous souls were averse to trying to break through the road. So, early on the morning of the 31st, Supervisor Duthie armed with snow shovels and in a truck of the familiar vintage that made walking a pleasure, set forth to prove that the road was navigable. Two hours later he called up "tell the delegation to come on, the road is fine." The delegation, composed of representatives from Deadwood and adjoining towns "came on" in six machines. It was a memorable trip--wind and tide was against them. All cars were equipped with chains, but it was universally regretted that they were not also provided with water wings and submergeable turrets. It was the consensus of opinion among those who finally got through, that Duthie is either an incurable optimist (to put it mildly), or he meant the road was "fine" to show the Governor.

The Governor was met and escorted over the Boulder Park Road. He evinced great interest in its condition, but expressed no desire to return by the same route. At Deadwood a luncheon under the auspices of the Deadwood Business Men's Club was given in his honor. In the course of his speech, Governor McMaster said that the road should by all means be completed when funds become available.

WASHINGTON NOTES

News To Us: "Director of the National Forest Service" was the caption under a picture of Mr. Stephen T. Mather, Chief of the National Park Service, in the Washington Post, Sunday, April 3.

Assistant Forester Kneipp "headed West" April 1, his first stop being Hot Springs, Arkansas.

Airplane Survey of Olympic Blowdown: The War Department has consented to cooperate in making an airplane map of the windthrown area and has ordered from California three planes with all equipment and personnel, the District Forester at Portland to furnish the personnel for the actual mapping. This work will be undertaken at once.

It is a Waste of Energy for local editors to reproduce Service Bulletin material in their local or District publications, since the Washington edition goes to all members of the Service.

Tree Expert for Honolulu: C. S. Judd, Superintendent of Forestry in the Territory of Hawaii, has written to the Forester that he is looking for a tree expert to perform the duties of a city forester in Honolulu. It will probably be possible to pay the transportation of such a man from the East to Honolulu and pay him at the rate of about $200 per month. In taking this up with the Forester Mr. Judd writes that the Hawaiain Electric Company, Mutual Telephone Company, and Rapid Transit Company of Honolulu have agreed to combine with the Outdoor Circle of Honolulu in an effort to take better care of the street trees. The purpose of employing such a man is to see that trees are properly trimmed whenever they interfere with the electric wires and also that he may be in a position to give advice for the planting and removal of street trees.

Any aspirants for this position should submit applications through proper channels to the Forester for further action.--P.K.

Ireland, according to a recent article in "Irish Gardening," received from the British Government for its forestry work the sum of 3½ million pounds ($11,500,000) for a period of ten years, or $1,150,000 a year, starting April 1, 1919. The total area of forest land in Ireland is approximately 286,000 acres. This appropriation is quite a contrast to our annual appropriation of about $5,500,000 for a present forest area in the country of something like 470,000,000 acres. Putting it another way, using the total area of forest land of the country as a basis, $4.00 of Government money is spent on every acre in Ireland as against a trifle over one cent on every acre in America.--J. B. Cuno.

A Proposed New Map: I have often thought that a map planned along the following lines would be of real practical use to the Service. The size would be about 20" by 30" and it would show in combination elements that to my knowledge have not been placed on maps heretofore prepared by us. The map proper would be an outline map of the United States--the State outlines and names, the National Forests and their names. Other items of the legend might be purchase areas, district boundaries, various headquarters, experiment stations, etc. Bordering this map and integral with it would be several small maps, such as one showing the forest regions in relation to the National Forests, together with various statistical data (the lumber production both by years and species, pulpwood production and the output of other forest products, etc.) and charts of similar interest. The object is to have immediately at hand on one map data that are often wanted without having to make inquiry here and there in various offices of the Service for information that should be more quickly available. It is thought that such a map would supply a real need.--J.M.Witherow.

The Traveling Fraternity is on a "strike" against exorbitant charges by hotels for rooms and food. Copies of prices charged by leading hotels makes one think that Jesse James was a piker as compared with the present day hotel proprietor. While it is doubtful if a Forest Service officer on present travel status is ever flush enough to stay at a "leading" hotel in any large city, it still behooves us to have backbone enough, when we think we are getting "held up," to say so in emphatic terms and walk out. Retail business concerns have learned to their sorrow what it means to have the public go on a "strike" against high prices and profiteering, and it might be well for hotel companies to get a dose of the same medicine, which everyone who travels agrees is about due them.

History of the 20th Engineers (Forest) in France, 1917-1919, is the title of an interesting new book, carrying 30 pages of illustrations, recently off the press of the 20th Engineers Publishing Association, Portland, Oregon.

Forest Progress Reports are published annually for fifteen or more provinces of India and adjacent British possessions. As forest administration saw its beginning in those countries some 60 years ago, the form of the reports has become well settled. Reports on finances extend back a period of 50 years. Much detailed information is given for each province under the general heads of constitution of the forests, management, financial, research and experiments, administration and general, and in subdivisions are treated working plans, communications and buildings, forest protection, silviculture and exploitation. In addition there are appended to each report, 20 or more formal tables giving statistical data. A separate summarized report on statistics is put out each year covering the entire field of the provincial reports. Finally within recent years an annual progress report is published covering work of the Forest Research Institute.

Altogether there is available in published form in these annual progress reports a mass of data, over a long period, on forest administration, development, research and experimentation which should not be overlooked by American foresters. It deals with extensive forestry under varied and trying conditions, the general aspects of which, if not many specific phases, also, are encountered in America. The facts and experience developed in India should therefore yield many valuable practical lessons.--E.R.H.

DISTRICT 1 - NORTHERN DISTRICT

Hurrah for the Cabinet! (Of how many Forests could the following kind words be said about any job? This happens to have been said about planting and is an extract from the Annual Planting Report from District 1. The extract speaks for itself.--J.F.P.)

"Possibly at no time in the history of planting in District One has a planting job been gone into with such forethought and thoroughness as the Cabinet Forest did this one. In spite of the difficult labor situation, a good crew of local men was secured through a canvass of the community weeks before spring opened up. The proposed camp site and the lining up of areas was done long before the snow had left; and the tent stakes were driven in frozen ground, in order that everything be ready for a running start as soon as the ground permitted. The Cabinet had planted their area and spent their allotment and were calling for more of both when the other jobs were just getting nicely started. Mr. Howard Drake, lumberman, was in charge of this project."

Game Warden Asks Cooperation: At a conference held in Helena, Montana, on March 18, Chief U. S. Game Warden George A. Lawyer proposed to law enforcement officer P. J. O'Brien, that he would like to designate as U. S. Deputy Game Wardens a number of Forest Rangers in the Northwest, the purpose being to cooperate with the Biological Survey in the enforcement of the Federal migratory bird laws in this region.

Another Scaler: The Whitman Forest in the Service Bulletin of March 14, 1921, reports a scaler who in one year scaled 63,000 logs, which totaled approximately 12 million feet. The Kaniksu now comes forth with a record of one Robert E. Dow, who in a period of five and one-half months scaled 48,000 logs, which totaled 8 million feet and which had a value of $41,000.00.

American Legion Camp for Beaverhead: The Dillon Post of the American Legion made application March 23 for a permit to establish post barracks and a permanent camp for the use of its members at Elkhorn Hot Springs, Beaverhead Forest. The local force feels that this is one of the best opportunities ever offered to secure the attention of the 845 Beaverhead County men who served in the World War. It is believed with the proper encouragement this force will become free advocates of forestry principles. The work contemplated will take some years to accomplish. It is planned to erect barracks and tent camps for both sick and well. Later the area set aside for the use of the Legion will be developed into a ground suitable for reunions and encampments.

Forest Geography and History: The public generally is ignorant of National Forest geography and history. The geography of the State as taught in the public schools is woefully lacking in this respect.

The members of the "As You Like It Club," of Missoula, Montana, who are recognizing the lack of information on this subject, recently requested R. P. McLaughlin to speak to them on the National Forests of Montana. His talk pertained to the geography and history of the Montana Forests. An outline of the Service organization was also presented.

The Missoula Section of the Society of American Foresters at its regular bi-weekly meeting listened with great interest to a well-written paper by Forest Supervisor A. M. Baum on the subject "The Labor Problem in Fire Protection in the Northwest."

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Stockmen Appreciate Deferred Grazing Fees: The following letter from the Colorado Stockgrowers' Association was received by the District Forester:

"The Colorado Stockgrowers' Association through its Board of Control, which met on the 22nd day of March, 1921, instructed me to express to the Forest Service their appreciation in deferring the payment of the grazing fees until September 1st, instead of April 1st, as is customary.

This ruling means a great deal to our members and we feel that we are expressing the sentiment of our entire membership in this matter."

Forest Officers of Colorado are taking an active interest in the Colorado Game and Fish Protective Association, of which Assistant District Forester Hatton is Secretary.

Forest Supervisor Agee of the Cochetopa, recently brought about the organization of the Saguache Fish and Game Protective Association which has sent in 67 memberships to the State organization. This local association is particularly interested in fish propagation and has agreed to put up the money for local hatching operations which will be conducted by Ranger Frank L. Trickel.

Economy in Planning Summer Home Sites: Two large group plans have been made for lot arrangements in the San Isabel National Forest. This preliminary work included a survey on the basis of 1 inch to 100 feet, with 5-foot contours; tree and shrub groups indicated on the map; subdivision arrangement on 117 lots, including reserved areas for a store, filling station and garage; working out the courses of lot lines, distances, etc., so field men will be able to take a chain and compass and stake the lots right on the ground, and a completed road plan. The total cost was $1.26 per acre. It is believed that this sets a new record to this point for planning of summer home groups in the Forest Service.

It is believed that the summer home area can be staked by one of the Forest force with a cost not to exceed 50 per cent of the total to date, which will mean that the survey costs will be approximately $1.85 per acre. No further field work will be necessary after these lots are permanently staked on the ground, and it is entirely possible that each lot can be given under permit with a cost not to exceed $2.50 per lot.

The Botanical Garden Trail, first suggested by Recreation Engineer A. H. Carhart, to be constructed on one of the National Forests, has received the endorsement of the following organizations: The Denver Chapter of the Garden Club of America, the Denver Ornamental Horticulture Society, officials of the Denver Park Department and the Colorado Mountain Club. It is planned to construct this garden on the Mt. Evans area if sufficient funds can be raised by donation.

He Changed His Mind: James C. Barnard of Foxpark, Wyoming, has tendered a draft of $30.11 in full settlement of a fire trespass upon the Medicine Bow National Forest. The story behind it is that Mr. Barnard ignored suggestions made by the local Forest officers that he settle the fire trespass case on this basis. Consequently the case was referred to the Solicitor and by him to the Attorney General for action. Mr. Barnard apparently has a more wholesome respect for the United States Attorney of Wyoming because he found it expedient to make the payment of $30.11 when interviewed by the Attorney. Previous efforts by the Forest officers were without avail.--P.K.

DISTRICT 3- SOUTHWESTERN DISTRICT

Movable Boundary: "I met an eight months old calf during December with a National Forest Boundary sign hanging to its nose. The owner of the calf even had the gall to ask me to supply him with about 50 signs, since they make excellent blabs for weaning his calves." (Ranger Scholefield in Coronado Bulletin).

No on and off permit for this calf - he's always grazing inside the boundary.

Hughes Starts Road Work Season: Engineer Hughes is leaving for the field to-day to commence work on the Water Canyon and Lee Valley Roads on the Apache and Alpine-Reserve Road on the Datil. This latter project covers the section of road between Luna and the State line and will cost about $12,000. One half of this cost will be met by contributed labor, teams and supplies by the people of Luna Valley.

Hitching Post to Compete with Service Stations: "The hitching post is coming back to Santa Fe. A petition is being circulated about town among the equestrian folk asking that the city authorities place hitching posts along the streets against which the horses can be parked. They claim too much favoritism is shown the automobilist. Santa Fe is a town unique, and hitching posts will, if parked full of horses, help keep it so."

Let Them Know: Supervisor Winn of the Gila has a habit of letting local people know that the Forest Service notices and appreciates any work done in the interests of forestry and conservation. Recently a Silver City motion picture house showed an educational reel on a forest conservation subject. Mr. Winn wrote the proprietor of the house an appreciative letter the following day. This is not the first instance of this type and the possible variations are many. Schools, boy scouts, commercial clubs and so on are often putting over effective bits of conservation publicity or education. Keep an open eye for similar cases and slip the individual or organization a note of appreciation

Manzano Educating Permittees: "Concerning split fence posts, we made a sale of 4,000 posts on the Tijeras District, specifying that all large trees suitable for splitting into posts and marked for cutting must be used. After the operation started, a great controversy arose, the purchaser and his contractor averring that cedar and juniper could not be split, that the native contractor never had split posts and was too old to learn how. We sat tight requiring a demonstration of the unsplitability of cedar and juniper. Mr. Kissam supervised the experiment, showed the contractor how to use sledge-hammers and wedges, and ended by converting him wholeheartedly to split posts.

"Moral: Many a prejudice, like beauty, is only skin-deep."

Who Died?: "The following is quoted from a letter found in the files: 'There was a dead W.-Triangle two-year-old heifer by the old troughs. She evidently got bogged down and someone helped her out and later died."

Ranger's Wife Tells Tales: The April issue of Outers' Recreation contains an interesting illustrated article entitled "Forest Service Tales, by a Ranger's Wife." The article is written by Mrs. James H. Sizer and refers principally to the Apache.

A New Version of Seasons: Forrest Shreve of the Desert Laboratory, Tucson, classifies the Tucson seasons as: fore-summer, midsummer, after-summer, and winter. Sort of an inversion of that old chestnut--"nine months winter and three months d-- late fall."

An Argument Against the Bonus: "Quoted from the remarks of a disappointed homesteader: 'My husband gave the Forest Officers to understand that he was on the land and he expected to remain there and so he did until his earthly pilgrimage ended February 18, 1921. - - - - - - I am a 100 per cent American and I do not like to be told that this thing can not be done when I know it can be, but perhaps not by a man who likes a soft easy job with a good salary.' "

Why Not More Law Enforcement: In the last 10 years 4,800 fires which burned over 297,176 acres were reported on the National Forests in Arizona and New Mexico. Of this number, 45.1 per cent were man-caused and the remainder from lightning. It cost the Forest Service $81,199 to handle these fires, while cooperators paid out $11,939. Provided the man-caused fire had all been eliminated, the cost would only have been $27,265 to the Forest Service and $1,968 to cooperators. The area burned would only have been 22,360 acres. Isn't this a pretty big bill for District 3 to pay for someone else's carelessness?

Look to Your Ladders: "The roof of the Tajique Station caught fire recently. Luckily Ranger Lemley put the fire out before it did much damage. He had great difficulty getting onto the roof, and has constructed ladders for future emergencies. If you haven't a ladder at your station, buy the material and make one.

DISTRICT 5 - CALIFORNIA DISTRICT

Aviators Test Magnavox: At a test of the Magnavox Apparatus recently conducted by the Army Aviation Officers at Mather Field the following results were obtained:

The voice was distinctly heard between different points on the ground at a distance of approximately one mile. It is assumed that the operator's voice could have been easily detected up to a distance of three miles, provided a stiff wind was not blowing against him.

In tests between airplane and ground messages were dispatched from altitudes varying from 1,500 to 4,000 feet. At the time little or no wind was blowing and the operator's voice was heard fairly well. When a wind of any substantial velocity was blowing, it materially impaired the efficiency of the apparatus. In all of the air tests it was necessary to throttle the motor and put the airplane in a glide while talking.

These tests were conducted with a view of ascertaining the practicability of the use of the Magnavox in connection with Forest Air Patrol.

Deer on the Trinity: According to an estimate recently made by Rangers there are within this Forest, about 25,000 deer. Local residents estimate that there are at least 40,000 deer within the Forest.

Thirteen Mountain Lions were killed in the vicinity of the Trinity game refuge during February. These animals had killed numerous deer and the campaign against mountain lions will be continued.

How Cover Modifies Temperature. Data taken on the Angeles, the average of four years, at 6,000 feet.

Daily Mean Temperature	Number of Days per Year		
	Open ground	Chaparral	Forest
Below 32°	11	12	9
32° -- 40°	78	78	74
40° -- 50°	96	83	89
50° -- 60°	88	81	100
60° -- 72°	83	98	87
Over 72°	9	13	6

Frost occurred on 87 per cent of the days with a temperature of from 32° to 40° in the open and chaparral and only on 75 per cent in the forest. On days with a temperature of from 40° to 50° frost occurred on 49 per cent of the days in the open, 70 per cent in the chaparral and 33 per cent in the forest. With mean temperatures from 50° to 60° frost occurred on 45 per cent of the days in the open, 87 per cent in the chaparral, and but 2 per cent in the forest.

Do Improved Methods of Range Management Pay? We often hear this question asked by stockmen, and even by members of the Forest Service. We know, of course, that the question can be answered in the affirmative, but often find ourselves without tangible proof to justify such a conclusion.

Deputy Forest Supervisor Mace has furnished us with at least one case of concrete proof. As more or less of a demonstration project, the Frying Pan Allotment on the California Forest, consisting of 10,440 acres, was selected as an area on which Forest Service methods of management would be thoroughly tried out.

The area had been grazed since 1908 with from 850 to 1,450 head of sheep for seasons of from 69 to 118 days. Mace studied the range very carefully, proceeded to make a topographic type map, lay out his camps properly, and see that the permittees followed the plans suggested. Instead of grazing the area with one band of sheep, as had previously been done, he put two small bands on the allotment, with the result that an increase of .58,891 sheep days, or 41 per cent over the best previous year of which we have record, was secured. The same class of sheep were used in the experiment as had grazed the area heretofore, and the range and the sheep were in better condition at the expiration of the season.-- C.E.Rachford)

California State Automobile Assn., with a membership of 30,000, prints the following invitation on the back of all mountain route maps. Publicity like this goes a long way, and the idea can, doubtless, be used to advantage in other Districts:

AN INVITATION

The National Forests in California extend from Mt. Shasta on the north to the Mexican line on the south. They offer exceptional opportunities for every form of recreation.

These 18,000,000 acres of Government lands include much of the most impressive scenery and many of the best camping, hunting and fishing grounds in the State.

You are cordially invited to become better acquainted with them for you are a part owner and you should be interested to see how they are being managed. You may go where you please, pitch camp wherever the fancy strikes you, and stay as long as you like. Improved public camps will be found at many places on the more traveled forest routes.

Wherever you camp in the National Forests wood for the camp fire is free, and the free use of Government telephone lines is yours for the asking. Care with fire and a clean camp ground and compliance with the game laws is all that is asked of you. Camp fire permits are required on most of the Forests.

For information or maps call upon or address the District Forester, Ferry Building, San Francisco, or any Forest Supervisor.

Help Keep the Mountains Clean

Help Prevent Fires

DISTRICT 6 - NORTH PACIFIC DISTRICT

Quoted, With Modesty: The following resolutions are among those passed by the Oregon Forest Fire Association at their annual meeting on March 18:

"We commend the Federal Forest Service for the spirit of cooperation and assistance which characterizes all of its dealings with other protection agencies in this State and we particularly wish to express appreciation for the fair and practical manner in which funds for protection of Oregon and California grant lands have been handled as well as those for protection of headwaters of navigable streams under the Weeks Law.

We endorse the Snell Bill as the best means for stimulating forest management in the United States and as presenting the most feasible plan for carrying out a uniform National Forest policy.

We urge the passage of the Sinnott land exchange measure in order that both private owners and the Government may, where this is feasible, block out their timber holdings to the benefit of both the Government and private owners.

We urge upon Congress and the War Department the need for maintaining air patrol over forested areas of the West and wish to point out that already considerable expense has been incurred by cities and protection agencies with the understanding that such patrol was an established institution. The patrol of our forests affords excellent training for pilots and observers as well as placing added safeguards around valuable public and private property."

Supervisors' Meeting: February 14-22, the first since 1917, was pronounced to be the best ever held in the District. Many fundamentals of forest administration were subjected to the searching rays of impartial analysis,--more than one Supervisor present was from "Missouri." And yet withal there was peace and concord, and no quibbling. There was serious and frank consideration given to policies and tendencies.

Special talks were given during the meeting by Mr. E. T. Allen, of the Western Forestry and Conservation Association, on the Snell Bill; by Dr. J.V. Hofmann on the scientific basis for our methods in fire control, and by Grazing Inspector C. E. Rachford, of the Forester's office, on Range Valuation plans. This last brought out some lively discussion. No Supervisors'

Meeting is complete without its "Resolves"; this one was no exception, 39 resolutions having been unanimously passed.

On Saturday evening, February 20, a dance and social evening was held at the Multnomah Hotel, which was one of the most successful events of the week.

Increasing Carrying Capacity: The following excellent example of the results to be obtained through close study of individual ranges and utilization thereafter in the manner and by the class of stock best suited is furnished by the Wenatchee Forest:

Tiptop Allotment

Year	Actual No. sheep	Actual No. sheep days used	Increase over 1918	Increase over 1919
1918	1840	194,576		
1919	1200	106,800		
1920	6602	327,650	69%	206%

The plan evidently worked out satisfactorily both ways, i. e., increased use as indicated above and fatter lambs as indicated by the following:

"Mr. Knox called .... he stated that on July 9, they shipped from the Tiptop allotment 1508 lambs and 873 yearlings, and that they were very fat; that the sheep on this allotment are much fatter than ever before, and that Lenzie's plan of feeding the allotment has worked fine.

E. L. Springer, Clerk."

The same general idea when applied to cattle range seemingly produces similar results judging by the following from the same section of the Forest:

First Creek Cattle Allotment

Year	No. Cattle	Number Cattle days	Increase Cattle days	Per cent Increase
1918	820	138,772		
1919	1040	174,720	35,948	26
1920	1208	202,944	64,172	46

--E. N. Kavanagh.

Having Something to Work With: While prowling around Ranger Stations during the last few years, it has seemed to me that there is one thing in which we can improve our ways and that is in the matter of tools. With good tools a man can, and often does, pretty nearly earn the high wages we have to give him now-a-days. With poor tools it's an impossibility. If a man can earn $4 a day with a well-fitted saw or a well-ground, well-designed axe, or a good new shovel, how much can he earn with dull ones? Call it $3--not any more than that on the average. At that rate, how long would it take him to lose enough to buy a new tool? Or, supposing a man can corral a fire in one hour with the best tools--how big will the fire get if he has to sort of wear the brush off with a dull brush hook?

It seems to me that in these days of short allotments, if I were a Ranger I'd spend a lot of time figuring on the tools in my District. I'd get those half-worn tools into the best shape possible and put them to work until they were about right to condemn. After that, the man who tried to work with them would be shot at sunrise. Then I'd buy new tools out of my allotment, or make someone whose job it is to buy these things so miserable that he'd get them in self-defense. That's what I'd do by Heck--or at least I think I would.

Too much property is a waste and a burden; but the greatest economy we can practice is having plenty of well-kept tools for our work. And the District where there isn't room for a little improvement is very, very rare.--E. H. MacDaniels.

Ranger Bill Says:

Guard Jep Saunders who used to be always singing "How 'Ya Gonna Keep 'Em Down on the Farm," is tendin' mules again at the road camp.

I've got a lot of official correspondence filed under DA-Disappointments.

Bill West, the Ranger on the next District, was over t'other day in a Service uniform, but had to introduce himself.

DISTRICT 8 - ALASKA DISTRICT

It's a Great Life! The following extracts from the diary of T. M. Hunt, formerly Supervisor of the Chugach and now with the Department of the Interior, are descriptive of a trip made during August, 1913, in the vicinity of Kenai Lake, Alaska:

"Started up river after noon trucking dory. Found river overflowing banks making progress very slow. Caving banks fill the river with 'sweepers' and at 3 p.m. the boat was swamped and entire outfit washed away. Succeeded in rescuing Bell after very narrow escape. Beached the boat and recovered tent, bedding and a few other articles. Lost rifle, clothing, ax, tools for engine, oars, and all provisions, also notebooks, papers, etc. Cached all property recovered in trees near the boat and returned to the lake where we found an old skiff and crossed to south bank to old trail. Walked to Ray cabin and camped without food. Nettleton will return for the dory when the river falls. Bell will assist him as the boat must be returned to owner at Roosevelt. Saw several moose to-day."

To many men an adventure of this kind would be the event of a lifetime. To the Forest officer such occurrences are all in the day's work--half a dozen lines in the diary to record the thrills of a swamped boat, a nearly-drowned man, a lost outfit, with the resulting supperless and bedless camp--and the incident is crowded from the mind by the hurrying events of the following days.--L. C. Pratt--Chugach.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

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RECRUITING FOR THE SERVICE

By Paul P. Pitchlynn--D-5

How many of us have stopped to analyze fully the methods used to fill the gaps made in the Service organization by Ranger resignations?

How much do we know about the men who take the examinations, and how far have we gone in properly assisting the Government's employment office, the Civil Service?

Have we recognized sufficiently the necessity for attempting to build up a replacement force?

On many Forests the officers are requested each year to get in touch with men they feel are qualified for Service work and to persuade them to take the examination. Other than this, little systematic effort is made in general to build up and maintain a strong replacement force. Good organization demands a better system than this. Forest Supervisors should be as responsible for building up a replacement force as for maintaining their Forest administrations at a proper standard. This responsibility should be a joint one, as District Rangers are generally in a position to be of material assistance. They should not, however, be entirely depended upon as recruiting officers merely because they maintain a close contact with the Guard force which furnishes the biggest part of the new Ranger material. There is some danger where this is done of bringing into the Service men whose biggest qualifications are acquaintance with local people and knowledge of the country. In other words, such knowledge can, and sometimes does, have undue weight with the local Forest officers because of temporary expediency.

The following scheme has suggested itself:

A close canvass of all available material on and adjacent to the Forest by the Rangers and Supervisors would be the first step. The second would be to record systematically all facts concerning the education, training and character of the men listed. The third step would be rating of one against the other, until only those men considered particularly desirable are listed for future consideration. This should be made the first weeding out of undesirables.

The body of men resulting from this winnowing process would, in so far as possible, form the reservoir from which our Guards and future Rangers are to be drawn. Guards should be given all the training possible, consistent with their duties, to fit them for work as permanent Forest officers. This training should not be haphazard but should be the result of careful thought and planning. It is realized, in this connection, that there are many men efficiently filling guard positions who are not qualified for or who do not aspire to permanent appointment. These men have, and should have, their place in the organization only so long as their number does not become large enough to interfere with the training of men for Ranger positions. This class, however, does not come within the scope of this discussion. Close watch on services

Recruiting for the Service (Cont.)

of the men filling the training positions should be maintained and sufficient information gathered to definitely pass upon their qualifications as possible Rangers before they take Ranger's examination.

The right kind of suasion should be brought to bear to prevent, if possible, those men whose qualifications are such that they can never become more than very mediocre Forest officers, from taking the examination. This would be the second winnowing out process. If they are not amenable to such suasion, the examining officer should report all facts possible bearing upon the applicants' qualifications at the time of the examination.

In the event of appointment the only recourse is to exercise, if necessary, the right given employing officers during probation periods. This should be the third and last weeding out. Removing men from the Service after appointment whether probational or final is expensive, as a great deal of time and effort is necessarily expended in training.

It is obvious that every effort should be made to determine a man's fitness for the job before he enters the Service as a Ranger. It is not possible to formulate a set policy for use in those cases where men living at a distance from Forests apply for Ranger examinations. The usual procedure can in most such cases only apply.

Supervisors and Rangers by combining effort in this work can, undoubtedly, to a great extent, guide the best available material into the Service organization. By the same token they can help both the Service and the men not considered well qualified by preventing them from entering in on a life work for which they are not fitted. It is not every man who is fully capable of judging others, and the best interests of the individual and the Service can be subserved only by the necessity being recognized for joint responsibility and effort in recruiting by both Ranger and Supervisor.

Fire and Weather

By E. N. Munns--D-5

Various attempts have been made to tie in fire phenomena with the various climatic factors. The relation between the two has long been noticed by the field force and described in general terms such as "conditions were just right," etc. Studies now appear to show that there is a complex climatic resultant which bears a close relationship to forest fire and which for two years' data in California has given a consistent correlation. That complex is evaporation.

When one considers a large District, as California, the number of fires which start on any particular day does not vary greatly once the fire season has really begun. But the proportion of fires which become large fires is not a constant, and varies with a large number of factors such as location, cover, and weather conditions. Excluding factors brought about by the human equation and location, the size of a fire depends on weather conditions to a large extent. Some fires may burn for several days without spreading more than a short distance, while others in similar situations burn and spread rapidly. The difference between the intensities of these conditions is expressed in the difference in the rate of evaporation, for it has been found that periods of low evaporation are the periods during which most fires are caught while still small. In periods of high evaporation the fires usually get out of bounds and cover large areas.

The evaporation data on which the studies were based were taken in the southern part of California in 1915 and 1916 and it would be expected that the major correlation between fire and evaporation would hold in that locality. In the period from June to October, 1915, inclusive, 12 periods of marked high evaporation occurred and the fire history data show for the three southern California Forests that Class C fires of over 300 acres occurred in ten of these periods and fires of over 1,000 acres in four out of six of the very high periods of evaporation. In 1916, 10 periods of high evaporation show 10 periods in which fires of over 300 acres occurred, and out of five periods of very high evaporation fires of over 1,000 acres occurred in four.

Considering the individual fire, it was found that the largest fires and those most difficult to control have occurred during periods of high evaporation, and that the catastrophes which have occurred in District 5 in recent years have taken place during periods of very high and long continued evaporation. Such a period occurred from the 17th to the 27th of September in 1919, during which 10 per cent of the Angeles Forest was burned over.

While such data holds true in the southern part of the State, one would not expect it to hold true for such a distant region as the Klamath and Shasta Forests in the far north. But without exception, the fires for the entire District from the Mexican line to the Oregon border show a decided correlation to the evaporation data in southern California. The same periods of high evaporation are the same periods of large fires, and, conversely, the same periods of a low evaporation rate are periods of small fires.

Apparently then, if we could forecast in advance what the changes in evaporation would be we would go a long step in being ready to handle the emergencies which confront the Service when large fires suddenly occur simultaneously over a large area.

Practice What You Preach

(A fire, due to causes below enumerated, occurred in the Washington office of the Forest Service on April 8. Due to prompt action, it was put out without causing serious damage. Similar fires have been known to occur in the past in a number of our field offices. If there is any one organization in the world that should be "fire-proof" it is the U. S. Forest Service. We preach, write, and fight against fire, and spend over a million dollars a year to suppress such conflagrations. Therefore, we should be the last on record to start one. The following memorandum should be read seriously by every member of the Service. The man who sets a fire never forgets it, but do not be too sure that the same thing may not happen to YOU some time. Can you say you have never been guilty of carelessness with matches, tobacco, cigarettes, etc.? If you have, and have gotten away with it--you are lucky; but that does not excuse you from gross negligence. Take heed and govern yourself accordingly.)

Memorandum from Acting Forester to ________:

"I learn with the utmost chagrin that the fire which occurred in the Atlantic Building on April 8 was probably the result of a match carelessly thrown by you into a waste paper basket in which there was an accumulation of waste paper and dendrological specimens.

"The Forest Service for a number of years has been devoting a large amount of effort to the education of the public in the care of fire. The President of the United States within the last few days, as a result of the recommendation of the Forest Service, has set aside an entire week primarily to emphasize care with fire. It is all the more humiliating, therefore, to know that apparently this effort has not been effective within our own organization. It was only the result of fortunate chance that a large amount of Government and other property escaped destruction; that invaluable records, the accumulation of many years, were not destroyed; that possibly even human lives were not endangered, and that the Forest Service as a whole was not, in the light of its efforts toward education in the care of fire, greatly humiliated before Congress and the public opinion of the entire country. These considerations as well as the carelessness of which you were apparently guilty compel this action by the Forester's office."

Pulpwood Prospects in the Lake States

By Charles W. Boyce--Washington, D. C.

At the present time, the outstanding feature of the pulpwood situation in the Lake States is the tremendous amount of material that has been cut during the past winter. Practically all of the mills are stocked up to the capacity of their storage yards, some having sufficient wood to last them two years, under normal conditions, and all of them having enough wood to carry them to the next cutting season.

The reason for this great supply lies in the fact that during the past winter pulpwood has been the main reliance of the farmers for paying their taxes and running expenses. The farmers of this region are accustomed to trading their wood for credit at the country stores. The storekeepers act as jobbers, selling the wood either to the mills or to large jobbers who assemble it in carload lots.

In the fall the price of spruce pulpwood was very high, in fact, higher than it had ever been before. The general business slump which occurred last October and November threw many men out of work in other industries. These men went into the woods for the winter, which resulted in a greater supply of labor for getting out pulpwood. Added to this were the almost ideal conditions for logging in the greater part of the region, all of which has resulted in a much greater supply of pulpwood than normal, and consequently, a decrease in the price, amounting to as much as $6 per cord in some cases.

Some idea of the role that the farmers play in the pulp and paper industry is shown by the fact that between 50 and 70 per cent of the short wood in Wisconsin, that is,wood of eight feet in length, is logged by the farmer during the slack time in the winter. This same percentage does not hold in Minnesota, where the logging of the larger paper companies is carried on within their own organization. Probably 30 per cent of the pulpwood coming from Michigan is logged by farmers. In both Minnesota and Michigan there is a tendency for the larger logging companies to distribute the wood to the industries making the best use of it. This is, necessarily, dependent upon the price obtainable.

The usual pulpwood cut of Minnesota to be used in the manufacture of paper in Minnesota amounts to approximately 200,000 cords. Another 200,000 cords are sent out of the State to the Wisconsin and Michigan companies. This year it has been estimated by various men that the cut of pulpwood for Minnesota alone will equal 600,000 cords, nearly 200,000 cords more than normal. This has been thrown on the market at a time when the industry is more or less at a standstilll, due to the lack of orders and difficulty in securing new business.

During the spring of 1920 there was no such surplus in the supply of pulpwood, in fact, it was a matter of keenest competition to secure enough to fill orders without attempting to lay in a reserve stock. Many companies entered into contracts for three to five years at the then prevailing high prices, contracts with logging companies operating a thousand miles or more from the pulp mill. At the present time these mills are at a serious disadvantage, especially with the price of paper dropping daily.

The outlook for the Lake States seems to indicate that the industry will experience no acute shortage of wood for the next two years. However, should business in paper pick up to the records of 1920, the pulpwood supplies will be greatly lowered this year. It is said by many well-posted pulp men that there could have been a serious shortage of wood this year had it not been for the slackening of paper business as a whole.

National Forest Botanical Gardens

By A. H. Carhart, D-2

The term "Botanical Garden" calls to most minds neat little beds all properly contained within neat little hedges bordered by sanded walks. Each genus is corralled in its own allotted space, or the whole conglomeration of floral cousins, aunts, nephews, and other plant relations are housed in a glassed-in house. This is a gardener's paradise. There is a lot of gardening and very often little beauty in design in such a place. I know for I tried to get some landscape design in a botanical garden one summer and it was like getting lemon juice out of a china nest egg.

Since taking over the landscape design in D-2 a "hunch" which I am inclined to treat as a big idea in a strange environment has come to my mind. It is the possibility of working out a system of botanical gardens in the different sections where there are National Forests.

The design of every garden will take the form of a trail, so located as to bring out for the traveler the best there is in the beauty of native plants.

Such a trail in the Colorado Forests would start in the pinon type where yucca, sagebrush and cedars would be introduced in a logical manner to the layman visitor and grouped in ecological sequence for the student. Each group would for the most part be "built" into the trail, but so deftly placed as to look like they "growed" there. On the trail would go, climbing through the groups of plants which grow in the pine belt, the spruce belt and the timberline reaches until the upper sections would pass through the alpine meadows where small brilliantly colored flowers cuddle next to a snowbank. In each belt every possible exposure, soil condition and moisture phase would be touched by the trail so that every possible combination of plants could be demonstrated in their native environment.

For the student there is the possibility of covering the flora of the forests in a compact and pleasing manner, and to the layman this sort of a trail will be an unusual delight. Presented properly, such a plant collection can add immensely to the general love of nature by the public and to their general knowledge of plant life. For each, the layman or student, it will be well to have small inconspicuous labels with every plant. Such labels need not be ugly and can indeed add considerably to the interest of these trails.

To the Forest Service itself there will be a very great return. There are no complete collections of living plants in the Forests of the West where grazing men, Forest Supervisors and many others in the Service who are interested can go and see these ecological groups. It is certain that a few days spent on these trails in any locality will add much to the knowledge of any forest man interested in botany. And there is no small publicity in such an idea for the men in Public Relations.

This writing is to spring the idea. Is it good or bad? If it is worth anything at all, it should call out some comment from the ready pens of the Bulletin fans. There is a lot of work to it surely, but it is worth it. There will be trouble with handling the tourist trespasser truly, but isn't it still worth the effort? He is the fellow we want to educate. No real results are without some counterbalancing grief or work. So after this idea has been vivisected, kneaded over, or rebuilt, if it is still believed good, let's spring it on the World as a new and original Forest Service movement, something worth while for every one,--and let's do it before some one else beats us to it.

Range Revegetation

Arthur W. Sampson--Great Basin Experiment Station

Range depletion is due in a large measure to premature grazing and to lack of uniform utilization of the forage crop, investigations now being carried on at the Great Basin Experiment Station by grazing specialists show. These experiments, which have been conducted over a 4-year period, have been for the purpose of ascertaining just how certain range bunch grasses are affected by different systems of grazing.

It was found that the yield of violet wheat grass when removed by cutting once in a season, at the time the seed crop matured, was four and two-tenths times as large as when it was removed four times in a season and three and eight-tenths times as large and when the herbage was removed twice in the season.

Native brome grass, on the other hand, yielded six times as much when harvested twice during the season, but the yield from one cutting was three and three-tenths times as much as when it is removed four times. This means in range revegetation that the grass native there must be taken into consideration and a system of grazing used that is suitable to it.

The experiments also showed the striking difference in water content in herbage as the season advances. In the leafage of the violet wheat grass harvested once in a season, just before seed maturity, the water content averaged 41 per cent. Plants grazed twice, late in the season, contained an average moisture content of 51 per cent, while plants cropped four times in a season contained an average of 79 per cent of water. Early in the spring the young leafage may contain as much as 85 per cent of water. This is sometimes the cause of many livestock losses in the early spring. The green feed is sparse and contains so small an amount of food substance that it is necessary for an animal to travel great distances to gather daily approximately 85 pounds of succulent leafage, which is an equivalent to 16 pounds of dry hay.

When the difference in yield and nutritive value of the forage, in favor of the less frequently grazed areas, is taken into account, it is clear that frequent cropping is an extravagant and wasteful practice. Furthermore, about 85 per cent of a bunchgrass cover harvested four times in a season is killed out at the end of the third year, thus subjecting the soil to varying degrees of depletion through erosion.

News Articles for March

Author	Title	Publication
Wiesandanger, Albert	Oregon's Most Famous Camp Grounds	Highway Magazine
Sherman, E.A.	A Plan for the Disposal of Indian Reservation Timberlands	Journal of Forestry
Guthrie, J. D.	The Pull of the Northland	Some Outing Magazine
Kimball, K. E.	The Personnel Equation in Brush Disposal	Journal of Forestry
Reynolds, R.V. and N. Y. State College of Forestry	Wood-using Industries of New York	To be published by the N.Y.State Coll. of Forestry
Well, D. S.	Book Paper from Southern Woods	Scientific American
Wahlenberg, W. G.	A Method of Weeding Seedbeds of Coniferous Seedlings by Chemical Means	National Nurseryman
Carhart, Arthur H.	Our Gipsying Farmer	Wallace's Farmer
"	Camp grounds of the Forests	" "
Woodburn, James G.	Industrial Research in a Government Laboratory	Ind. University Alumni Quarterly
Thompson, M. W. and Stahl, C.J.	Where Forestry and Recreation Meet	Journal of Forestry
Shepard, Ward	Science versus Tradition in Game Protection	Journal of Forestry
Pratt, L. C.	Uncle Sam's Most Northern Woodlot	American Forestry
Shepard, Ward	The New Mexico Plan for Game Management	American G. P. A. Bulletin
Larsen, J. A.	Forests and Recreation	Amer. Scandinavian Review
Hutchinson, W.I.	Top 'o the World	Christian Science Monitor
Bates, C. G.	First Results in the Streamflow Experiment, Wagon Wheel Gap, Colo.	Journal of Forestry

Author	Title	Publication
Weaver, R. B.	The Burning of Dead and Down Trees as a Practical Protection Measure	Journal of Forestry or other technical journal
Munns, E. N.	Evaporation and Forest Fires	Monthly Weather Review

More About Names for the Sequoias

In raising the question as to whether the common names of our two species of Sequoia should not be changed, Mr. Mattoon has "started something" of very great interest. Personally, I do not believe this is the psychological moment to attempt to make the change. Moreover, I seriously doubt that there is popular dissatisfaction with the common names now in use. My impression is that there is more general agreement regarding these names than Mattoon seems to feel in saying "Everybody knows the two trees as 'redwoods'". It is, of course, true that lumber, shakes, vine stakes, etc., from the Bigtree and similar products from the coast tree are locally known as "redwood."

Desiring to review the basis of my own impression, I asked Miss Stockbridge to compile for me the common names applied to these Sequoias in the numerous commercial and popular articles published during the last thirty or forty years. The result appears to be strikingly in favor of Bigtree for the Sierra species, and Redwood for the coast tree. Thus, out of a total of 38 publications concerning Sequoia washingtoniana 28 writers use Bigtree; while out of a total of 65 articles concerned with Sequoia sempervirens 60 use Redwood as the common name. This summary does not include the generally similar use of these names by technical authors. It is fair to assume that the majority of those who have written about the Sequoias have seen and know these trees in the wild; hence their use of common names is comparable with what we might hear from dwellers and workers in the regions where the Sequoias grow.

In my judgment, there would be a material loss of dignity, which some trees seem to have, by substituting "Sierra Redwood" for Bigtree. It is certainly of greater bulk than the coast species. It is difficult to appraise public opinion, but I feel confident that if a referendum vote were taken in California the names Bigtree and Redwood would be elected to remain as now applied.--Geo. B. Sudworth.

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I have read with much interest Mattoon's brochure "Common Names of the Sequoias" appearing in the Bulletin for April 4.

Mr. Mattoon's article, it seems to me, is apropos and his recommendations worthy of careful attention. Offhand, though, it strikes me as a little inconsistent for him to say that the term 'redwood' "has never come into common or popular use, and for this reason a revision seems highly desirable," and then to say "everybody knows the two trees as 'redwoods'"; also to object to the name "bigtree" because it is trite. Coming down to brass tacks, isn't the term "redwood" itself as trite as "bigtree," for there must be about as many trees with redwood as there are trees that are really "big"; certainly, at least, "redwood" in India, in the East Indies, in South America or in Australia would not be Sequoia. Furthermore, it almost seems as if Mattoon begged the question by his title "Common Names of the Sequoias"; "Sequoias" is here used as a common name (for, if the generic name had been intended, it would have to have been Sequoiae, or else plain Sequoia without the article "the"); if Mattoon prefers the name "redwoods" it would have been better if his article had been entitled "Common Names for the Redwoods."

The writer holds no brief for any particular "common" names for the genus Sequoia; the genus has as its eponym, however, a grand old native American and, if he is good enough to serve as the Latin namesake, why not the English namesake also? Since Mattoon says "it is desired to urge a free expression of opinions held by those interested" in the premises, the writer nominates "Coast sequoia" and "Sierra sequoia" as vernacular names to be considered in the balloting for *S. sempervirens* and *S. gigantea*, respectively.

The writer is no misanglicist, but he will be glad to accept any "*nomen vulgare*" for *Sequoia* except the self-satisfied "Wellingtonia" universal with our British cousins.--Wm. A. Dayton, Washington, D. C.

Getting Shet of Our Buffalo

By W. C. Barnes

Trying to play Santa Claus with twenty lively buffalo as Christmas presents is no small job.

The distribution of the surplus buffalo from the Wichita herd has caused District 7 more grief than anything they have had to take hold of in a long time. Two members of the office force took to their beds for several days, which may or may not have been caused by this buffalo affair.

There is, however, some recompense to everything in this world, and that has come through the receipt of a number of interesting letters from different parties to whom buffalo were shipped, mostly from officials of the city parks to which animals were furnished. All of them seem to have appreciated the promptness with which their requests were handled, the Park Board of Everett, Washington, making favorable mention of the lack of red tape encountered, the ease with which the money was paid, and the promptness with which the shipment was made, it apparently appealing to them as unusual in Government dealings.

One individual in the Middle West, who had requested a yearling bull, was shipped one about twenty months of age, which, based on the general standards used by all stockmen in such matters, was still a yearling. When the animal arrived he was such a husky chap that the recipient apparently thought Rush had worked off a ten-year-old on him and promptly wired back that he had asked for a yearling, that the one received did not meet that requirement and was therefore at our disposal at the express office in his town. Inasmuch as there were some 400 unfilled applications for buffalo, instructions were promptly wired to the express agent to ship the animal on to the City Park at Trenton, N. J. On receipt of a statement from the District Forester as to the age of the animal, the corn-belt gentleman apparently had a change of heart, but it came too late and he lost his opportunity to secure a first-class buffalo practically as a gift, the only cost being the actual expense of shipping and crating. Moral: Never look a gift horse--or buffalo--in the mouth.

The Forest Atlas

By C. A. Kolb--Washington, D. C.

In the early days of the Service a need which soon made itself felt was the necessity of a central repository for the rapidly accumulating geographical and statistical information which was being brought into Washington, D. C., by that little band of indefatigable scouts sent by the Father of Forestry to "spy out the land." The material which they brought in was priceless, but as they cached it quite safely in various out-of-the-way places and enthusiastically went away for more, a situation arose in the upbuilding of the Service like that which took place in another famous building operation--the Tower of Babel. Men failed to understand one another and no one knew just what building material was available nor how it would fit in with his part of the work. So to bring order out of this chaos the Forest Atlas was established.

Many duties, more or less related to maps, have gravitated to "Atlas," but its principal function is the collection and preservation of maps and map data for the Washington Office of the Service as well as for the Districts.

Some idea of the task of merely keeping these records in a convenient and accessible condition may be formed when one is told that there are over 60,000 map pages in the Washington Office Atlas. These maps laid in line would stretch over 23 miles, a day's journey for a man. General Land Office township plats covering 175,000 square miles of National Forest area and U. S. Geological Survey quadrangles covering about 165,000 square miles are included with the maps and folios of the individual National Forests. The latter show, besides topographic features, a variety of classifications, boundary changes, etc.

The Forest Atlas (Cont.)

There are also maps of that comparatively uninteresting part of the world outside of the National Forests.

Suppose you wish to know what was the name of the first National Forest, when, where and by whom it was established--go to the Atlas. If you want information in regard to timber, grazing, water, Forest boundaries, or a multitude of other things--go to the Atlas. You may be planning a recreation or a hunting trip and still you go to the Atlas. Occasionally you read in the Bulletin that Ranger Bill Jones killed a bear somewhere on Mud Creek. You wonder where Mud Creek is and going to the Atlas find that it is on the Blank National Forest. If it is a certain class of map you may find there printed in red letters the word "bear" which proves conclusively that it was by consulting the Atlas that wise old Bill located the bear.

Like everything man-made, Atlas has its limitations; even its obliging Custodian Grant Bruce grudgingly admits this when he states that Atlas can not answer questions which should properly be referred to "Ouija," insisting, however, that its information is more reliable.

Ranger Bill Says:

Since the Big Boss visited this Forest one of the Rangers told me, confidently, that he's goin' to name his next boy "William B."

"Speakin' of the public needin' recreation," says my wife, "How 'bout me and the kids?"

I can't keep the gray out of my hair, but, thank God, I've been able to keep it out of my heart and legs.

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WASHINGTON NOTES

The Zero Hour: The total net receipts from National Forests for the period July 1, 1920, to March 31, 1921, was $1,817,821.58, a decrease of $624,342.74 over a like period in 1919-1920. Of this total present deficit, $622,106.98 is chargeable to loss of receipts for the month of March alone. Postponement of grazing fees is responsible for a loss of $593,870.82 in receipts to date.

Districts 1 and 8 show increase of receipts amounting to $49,289.42, and $12,737.79, respectively, for the nine months period; decrease in receipts for other Districts run from $18,677.45 (D-7) to $359,616.21 (D-3). All activities, except Timber Trespass, Special Use, and Fire Trespass, show decreases.

Are we downhearted? No! Our receipts are bound to fall short of former records this year, but think how they will climb next August when the "dogies" and "woolies" pay their income tax. Then, if conditions return to normal, the next fiscal year will show another payment of grazing fees in the spring of 1922. That's when we'll go over the top.

Send 'em In: If you have any extra copies of the "Use Book" you don't need, the Forester's office will be glad to receive them.

Educational Laws, making the teaching of fire prevention compulsory in public schools have recently been passed by the legislatures of the States of New York, Rhode Island and West Virginia. Similar measures have passed one house in Connecticut, California and Tennessee.

Real Publicity: Illustrated lantern slide lectures, loaned by the Forest Service to Dudley Grant Hays, Director of School Extension, Chicago, were shown 111 times to 22,200 persons, during the period December 16, 1920, to April 8, 1921.

The Mexican Government has set aside five great tracts as National Parks; two of these include the so-called "sleeping" volcanoes Popocatepetl and Ixtuccihuatl.

FOREST PRODUCTS LABORATORY

Chief of the Pulp and Paper Section at the Laboratory, recently vacated by Dr. Otto Kress, has been filled by the appointment of John D. Rue, formerly consulting engineer for the Mead pulp and paper interests.

Arthur T. Upson, after thirteen months in charge of Laboratory Operation, has been placed in charge of the Section of Industrial Investigations.

How to Build a Crate: Anyone who has occasion to ship goods in crates will do well to send for Technical Note No. 134, "The Crate Corner," just issued by the Laboratory. That the corner is the weakest part of the ordinary crate is a fact which can be observed at almost any freight depot. The new note contains illustrations of common faults in crate corners and shows how to remedy them by rearranging the members and fastening them with the right kind and size of nails. The famous 3-way corner, which the Laboratory uses on practically every crate which it redesigns for shippers, is shown in all its sixteen variations. In the ordinary crate construction, it is possible to pound the boards apart without much difficulty, but in the 3-way construction the pieces are so arranged that it is impossible to break open the crate without breaking the wood to pieces or drawing out the nails with a nail puller. Furthermore, with this corner construction, the crate takes up the least possible shipping space.

Laminated Baseball Bats: The usual method of making baseball bats is to turn them down from solid squares of wood. Tests made by the Forest Products Laboratory have demonstrated conclusively that they can be made just as well out of thinner pieces of wood glued together, and then turned to shape.

Laminated bats turned out at the Laboratory were put to use in baseball games during two seasons and proved highly satisfactory. Occasionally a bat broke in service, just as solid bats do, but in every case the break was due to failure of the wood and not to glue failure. Some players showed a preference for the laminated bats and used them at every opportunity; others were prejudiced against them. This was no doubt due in a large measure to the balance of "feel" of individual bats, which is perhaps the most important item to the player.

In the opinion of a well-known baseball coach, the laminated bats drove the ball just as well as the solid bats and were as good in all other respects. It seems thoroughly demonstrated, therefore, that to relieve a shortage of stock of the proper quality and size in ash and other suitable woods, baseball bats can just as well be glued up out of the more plentiful thin pieces.

Manufacturing Climate for Woodworking Shops: Probably the only people who can work where it is never too hot or too cold, too damp or too dry, are the carpenters in the wood shop at the Forest Products Laboratory. It is possible to keep the climate more nearly the same here than in any other spot, through the use of a unique system of water sprays, heating-coils, and fans, which condition all the air in the rooms every few minutes. Such great pains are not taken primarily, however, for the comfort of the workmen, but so that the delicate experimental wooden parts they are manufacturing will not swell or shrink while being cut and fitted together.

Some such control of atmospheric conditions is needed in every shop doing fine wood working. Makeshift methods, such as sprinkling water or wet sawdust on the floor, have been in common use for hundreds of years, but now the woodworking factories are asking for a better and more automatic way of controlling atmospheric conditions. Some large factories are adopting the laboratory system, and it is hoped that soon the system will be simplified enough to replace the sprinkling can in even the smallest shop.

In the Good Old Days a certain Guard, who afterwards became a Ranger, overtook a man who appeared to be amusing himself by shooting the insulators off the Forest Service telephone line. The Guard accosted the man and said, "A man as old as you ought to know better than that, and I don't know whether to beat you up or arrest you and take you into Hamilton," The man replied, "You look to me big enough to do either one." "Well," said the Guard, "I have other work to do and it is a long way to Hamilton, so peel your coat."

Instead, however, of the Guard beating up the stranger, the outcome was just the reverse. "Well, do you think you would try it again?" To which the Forest Guard replied, "You bet your life, it is not every day that I find anyone in this neck of the woods that can give me a licking. What's your name?" The stranger replied, "Cantway--I'm the 'Bitter Root Kid'", (a famous Montana pugilist).

Fifty Residents of Montana who were successful in guessing the correct age of a larch tree, cross section of which was exhibited at the Western Montana Fair last fall, have each received from the District Forester a picture of a beautiful forest scene to which is attached a written request asking for the cooperation of each in preventing Forest fires, and appealing to them to aid in the education of the public in fire prevention.

Slash Disposal in Arrears: Forest Management says the District is over a year behind in the work of slash disposal. With an annual cut of about 135 million feet, there is now slash from 70 million feet to be piled and burned, and 70 million feet now piled, still to be burned.

Smelter-Damaged Trees Still Have Kick Left: Forest officers on the Coeur d'Alene Forest report that the trees whose leaves turned yellow a year ago have sent out a fresh growth. At the time of the examination a year ago, it was found that the cambium of those trees which were afflicted was still healthy and showed no signs of the usual bluing of the sap in dying or dead trees. Developments will be watched with considerable interest. In the meantime, the proposal agreed to by the owners a number of years ago when the smelter was being installed is being made the substance of discussion with them towards arriving at a satisfactory settlement of the damage.

Outlook For Logging in Inland Empire: At the present time very little shipments are being made and very few orders are being received for lumber from Inland Empire mills. Idaho White Pine is the only species that is about holding its own. Fir and larch in some cases are bringing as low as $9.00 f.o.b. cars, and it is hardly possible to move them at such price cuts. Lumber operators in general indicate that general resumption in movement of lumber will not come before next fall, if then.

Diamond Match Company a Big Operator: The slump in lumber which so seriously affects manufacturers is not at all felt by companies making special products, such as the Diamond Match Company. This Company has purchased seven mills in the Kaniksu region. These mills, making 2-1/8 inch match plank out of white pine, are at present inadequate to supply the needs of the match block plant in Spokane, which requires from six to seven million board feet of match plank per month.

Private Owner to Practice Forestry: The Diamond Match Company has recently decided to pile and burn all the brush on its cut-over areas in Idaho and eastern Washington, in order to keep the land in a productive condition. This company at present owns somewhere about 150,000 to 200,000 acres in this locality. Much of the timber, of which only white pine is usable by the company, contains a large percentage of Douglas fir, larch, cedar and other species associated with the Idaho white pine. Not being able to cut these species except at material loss, the company is leaving them untouched on the areas. F. E. Olmstead is Chief Forester for the company and they are carryi a Resident Forester in this locality, as well as in other localities where they have timber operations.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Game Legislation in Colorado: Before closing, the Colorado Legislature passed four game refuge bills which, undoubtedly, will receive the signature of the Governor. This makes five game refuges in the State. The general game laws were also changed to conform to the Federal Migratory Bird Law, and bag limits on fish and birds were reduced, and the license fees increased. Coyotes, mountain lions, wolves, bob-cats and lynx have been taken out of the category of big game. Open season on deer was continued, but the dates changed from the first four days in October to October 12 to 15, inclusive. The season on elk and mountain sheep will be continued closed until 1930. There will be no open season on sage hens, turkeys, upland plover, pheasants, ptarmigan, partridge, pigeon, quail, doves, wood-ducks, swan, crane and curlew. Shooting from the public highway will be prohibited. The laws were changed also to provide for doubling the number of game wardens. There was also passed a predatory animal bill appropriating $12,500 during the next biennial period in cooperation with the Biological Survey.

Much of the success for the constructive game legislation at this session of the Legislature is due to the Colorado Game and Fish Protective Association recently organized.

Range Management Experiments to determine the best methods of handling foothill range and native pasture have been undertaken by the Colorado Agricultural Experiment Station, and the Forest Service has been called upon for help in preparing the working plan. The experiments are expected to cover a period of five or six years and result in data and a plan of management for the Experiment Station's 600-acre pasture. There are thousands of acres of pasture land owned by stockmen in Colorado which are similar to those on which the experiments are being conducted, and it is expected that the results of the work will be of great value to the ranchmen.

Lake States Ranger Meeting: The Rangers' Meeting of the Superior and Minnesota Forests at Duluth, the latter part of March, was the first of its kind held in the Lake States, and was exceedingly successful. Ranger Johnson represented the Michigan National Forest, and in addition there were present members of the State Forest Service and several outside speakers. Considerable interest was shown by outside interests in the work of the Service, and the president of the Automobile Association, who made a talk, guaranteed to raise the necessary funds to post the portages on the Superior Forest with improved camp signs, simple fireplaces, and sanitary facilities. The chief point of his talk was that the Forest Service does not get more funds because it does not make known to the public its needs.

Cooperation Awakens in Minnesota: Minnesota seems to be awakening very rapidly to the need for general forestry protection. Supervisor Dahlgren of the Superior National Forest and Fire Inspector McLaren of the District Office have just arranged with the Cloquet Lumber Company to pay for one lookout and two patrolmen on lands in and adjacent to the Superior Forest; the men to be hired and supervised by the Forest Service. This company and others have come to the realization that it is essential to protect reproduction as well as mature timber, particularly in view of the fact that the town of Cloquet, wiped out by the 1918 fire, has been rebuilt of concrete with the idea of making it permanent forest industry headquarters.

Michigan Fires: The fire situation on the Michigan was reported as serious by the Supervisor on April 6.

The situation in the Rocky Mountains has been largely relieved for the present by several snowstorms.

"Road Building on the National Forests" and "The General Work of the Engineering Department" were the subjects of addresses by District Engineer Mendenhall and Assistant District Engineer Brownlee at the April Service Meeting.

"Three million horse-power of undeveloped energy from the mountain streams stand ready to be harnessed in the National Forests of Colorado," said Mr. Mendenhall. Road construction and all its difficulties, illustrated with a hundred new lantern slides, was covered thoroughly by Mr. Brownlee, who repeated a story on 'hard rock' told by one contractor: "After drilling steadily for one hour, and while stopping to sharpen the drills, it was necessary for one man to hold his finger on the spot so they could find the place to begin drilling again."

Washington Officials Visit Denver: W. R. Fuchs, W. J. Nevins and J. M. Kemper, all from the Division of Accounts and Disbursements in Washington, are making general inspections of the accounting system and equipment in the twelve bureaus of the Department of Agriculture in Denver.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Arbor Day in Albuquerque: Looked more like Forest Service Day. In the morning through the financial assistance of the Albuquerque Morning Journal, we gave two movie shows to school children of the town at a local theater. Fifteen hundred school children drank in the Forest Service lore, "Ah'd"and "Oh'd" at the scenic beauties of the trip to Pike's Peak, cheered on the forest fire fighters, applauded the flag whenever it appeared, and generally had a good time. There is no question but that they carried away a concrete idea of forest fires and the Forest Service work generally. In addition to the show in the morning most of the reels were run during the balance of the day at three motion picture houses in connection with their regular programs.

Talks on Arbor Day and Forestry were given by Mr. Pooler at the High School, by Messrs. Kircher and Ancona at two of the grade schools and by Mr. Jones at the vocational training center. All of next week, fire prevention lantern slides will be run at the four motion picture houses in Albuquerque.

Post Office Cancellation Dies: Albuquerque, Phoenix and Silver City post offices will run fire prevention cancellation dies during Forest Protection Week and also for the balance of April. It is likely that Tucson will also use one of these dies again.

"Gee, but its fun giving something away free." The 6,000 seedlings sent to Albuquerque from the Gallinas Nursery withstood the raid of local citizens who came in waves, from nine A.M. until four o'clock in the afternoon. The four huge bundles looked impregnable for the first hour or two and it was feared that there would not be takers for the full lot. But the steady work of Forest Service and Chamber of Commerce people wrapping the Douglas fir and Englemann spruce in packages of from five to a dozen or more finally told and the seedlings ran out before the people wanting them did. In spite of repeated newspaper announcements describing the size of the trees, a number of folks came with cars, trucks and even wheelbarrows for their allotment, which, for a fact, in most cases fitted quite comfortably in a coat pocket.

Our Foreign Relations: "Forest Ranger Thompson has been negotiating with the Mexican Government, through the Mayor of Nogales, Sonora, for permission to cross the international boundary with men to fight fires in Mexico when they threaten the Forest."--Coronado Bulletin.

Season Opening at Ft. Valley: Mr. G. A. Pearson and F. W. Haasis have returned to the Ft. Valley Experiment Station where the season's experimental work will be gotten under way.

Gila Gets Another Jolt: The latest news is the closing of the Chino Copper Company's camps at Santa Rita and Hurley between April 1 and 10, for an indefinite period. It is estimated that this will throw five or six thousand people out of employment. The effect on Grant County and the Gila Forest will be immediately felt. Many of the local stockmen were dependent upon these camps and practically all our cordwood sales will show the effect. We hate to think what the Gila receipts will amount to this coming year.

Carson Has Champion Range of Permits: The grazing permits recently issued vary in size from one covering 25,400 S&G to another for one buck. In the C&H column the largest permit is for 1,000 head and the smallest just gets out of the exempt class.

At the Forest Service Movies: Arbor Day Speaker (trying to get off on right foot): "Now, children, what day are we celebrating to-day?"
Children in one voice: "April Fool's Day!"

Durability Test on Posts: To obtain information on the durability of different species when used for fence posts, ten gamble oak, ten pinon pine, twenty juniper, sixty-two western yellow pine, fifteen limber pine, twelve spruce, and twenty aspen posts were set in the vicinity of the Fort Valley Experiment Station near Flagstaff, Arizona, in October, 1910.

An examination of these posts made in 1920 by Mr. Pearson shows the following situation: Posts in each group still classified as good:

Juniper 30 per cent; yellow pine 16 per cent; limber pine 80 per cent; spruce 41 per cent; and aspen 15 per cent. All of the balance of the posts were still in place in the fence showing butt partly or badly decayed, except the following which had been removed entirely decayed: 61 per cent of the western yellow pine and 50 per cent of the aspen. This study gives an idea of the relative value of our southwestern species for use as fence posts untreated.

Number One on Sitgreaves: On March 29 Ranger Slosser, happening to be on the Deer Spring Tower in connection with telephone repair work, observed a bad looking fire on the Heber District. Six men were gathered at Heber and sent to the fire and Supervisor Hoyt left at once taking with him Rangers Hall and Hunt and Jesse A. Frost. They put in most of the night at the fire, arranged for its careful patrol and returned next day. Detailed report has not yet been received as to the area burned over, but it is estimated at about 400 acres.

Eggs as Publicity Agents: A large number of Willcox and Cochise people foregathered on Easter Sunday at Cochise Memorial Park in the Dragoons. At the instigation, Ranger Erickson says, of his wife, he sat up most of the night before painting pine-tree emblems and fire slogans on numerous Easter eggs which he distributed among those present.

Walnut Study Completed: A report entitled "Walnut Growing and Its Relation to the Agricultural Classification of National Forest Lands" has just been completed by Rex King of the District Office. The report is the result of five years accumulation of data relative to the infant walnut industry in southern Arizona where the so-called English walnut is being grafted onto native Arizona black walnut.

Death Losses of Other Days: Kirk Bryan, of the Geological Survey, recently uncovered the remains of a mastodon in the bad lands near the San Pedro Valley. Only one leg was found, the explanation being that the brute was bogged down while standing on one foot and waving the other through the air, thereby furnishing sustenance to the ancient representative of the genus coyote.--Coronado Bulletin.

Saving Deer: During the past three months, Messrs. Miller and Garrett have been trapping lions on the Blue for a $50.00 bonus offered by the stockmen using that range. So far, they have caught 16 lions--partly on the Datil and partly on the Apache. During the same time, Ed Steele, the Biological Survey trapper, caught 7 lions on the Tularosa and San Francisco ranges. It has been estimated that each lion kills on an average of one deer a week which would mean a saving of 1,196 deer per year for the 23 lions killed.

New Camping Resort on Apache: Work on the Lodge of Shoop and Black at Diamond Rock is progressing very nicely. This is an ideal location for a lodge, as it is situated on Black River, which affords good fishing during the summer and is in the heart of the hunting grounds of the Apache Forest.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Scientists Backing Forestry: At the fourteenth annual convention of the Utah Academy of Sciences, held in Salt Lake City on April 1 and 2, resolutions pledging the support of the Academy to the Snell Bill, or similar legislation, and endorsing the Fish and Game work of the Forest Service were unanimously adopted.

The convention was presided over by C. F. Korstian of the Forest Service, whose term as President expired at the close of the session.

The program for Friday evening, April 1, was a symposium on Forest Conservation in Utah. Korstian's presidential address entitled "Making the Forests of Utah a Permanent Resource" and illustrated with Service slides, was a feature of this program. S. B. Locke gave an illustrated talk on "Forest and Fish and Game Conservation." J. Cecil Alter of the Weather Bureau discussed "Forests in Relation to Climate and Water Supply of Utah," and Prof. Garrett of the Salt Lake High School spoke on "Forest Tree Diseases."

Memorial Trees: During the past few days, 53 maple trees have been planted along Madison Avenue in memory of the soldiers of Weber County who gave their lives in the World War. This work has been handled by Messrs. Baker, Littlefield, and Fetherolf of this office.

Fish Planted Under Difficulties: Deputy Game Warden, James Riggan, arrived in Spender Tuesday morning, March 8, with 75,000 Eastern Brook trout fry for restocking the streams at Kilgore and vicinity. The consignment was turned over to Forest Ranger Foster Steele at Spencer who arranged for their transportation to Kilgore where they were met by Forest Ranger K. C. Allen and a crew of public-spirited residents of that section and distributed that night. The work of distribution was made very difficult owing to the condition of the roads. From one to three feet of snow on the highway and no roads broken open to advantageous distributing points. They left Spencer at 3:00 P.M. and arrived at Kilgore at 7:00 P.M. The final distribution was made with hand sleds and the fish were placed in the streams by lantern light. This is the first time winter distribution of fry has been undertaken in this section of the country. The results so far are very satisfactory, only about 10 per cent loss being sustained in the operation.

Forest Pictures in Demand: During the latter part of March four reels of Forest Service pictures were displayed in two of the Boise movie theaters and the U. S. Public Health Service Hospital. Also local Forest slides and a set of "Forest Conservation" slides are being shown for the benefit of the fifteen Boy Scout troops, a descriptive talk being given by Supervisor Campbell on each occasion. The Scouts greatly appreciated the pictures and asked for more. This gives a splendid opportunity to do missionary work along Forest protection and conservation lines.

Squirrels Destroy Timber: Ranger Horel reports that pine squirrels are destroying considerable timber in the vicinity of Jenny Lake by girdling the trees. He at first thought it was the work of porcupines, but later, upon observing the squirrels at work, concluded that "porky" was innocent. The squirrels were observed in numbers on the snow eating the bark from the trees, completely girdling the trees just above the snow line.--Teton News Letter.

Wild Animals I Have Met: In A EM letter of April 1, written by the District Forester, and quoting from a letter received by him from the Forester, they ask that the old-timers in the Forest Service relate some of their exciting experiences with wild animals, bad men, forest fires, etc., to be used as suggestions for a scenario of the Forest officers' lives and work. While we can not think of any such experiences at this time, still we can think of one wild animal that inhabits the mountains of Idaho, which has no doubt caused Forest officers more exciting experiences than all other animals, bad man, etc., combined. We believe that this animal is the most ferocious of any that exists in the world to-day. If he meets a Forest officer on the trail, he is ever ready to dispute the right of way, and I never saw the old-time officer that would not give him all of the trail and then some, if he happened to see him first. If you have never met this animal, and should happen to be riding down the trail some warm day and suddenly the old horse stops in a kind of a surprised way and gives a snort and takes one big heave and you go up into the air, and then you come down to earth and land on a red hot twenty-penny spike that runs into your leg full length and you don't see anything, and your horse runs away and you have a heck of a time catching him and your pack horse bucks the pack off and scatters it for two miles down the trail, and you wonder what it's all about, and you begin to tell the first old-timer you meet about it, and he begins to grin and you wonder how he can see anything funny about such a serious matter, you may know that he has met this animal and that he was the victor. You could write a whole scenario about the experiences of this little animal, but you would have a hard time finding an actor who would be willing to be a part of the cast when it comes to make the picture. Yes, one little Yellow Jacket can give you more thrills in less time than all the other wild animals, bad men, etc., put together.--Challis Chinook.

DISTRICT 5 - CALIFORNIA DISTRICT

Gathering of the Clan: During the past week we have had with us from the Washington Office the Forester, Colonel Greeley; Assistant Foresters, Headley, Carter and Smith; and Inspector Kelley. Supervisor Dunston of the Lassen has also been with us, and you may have noted that we have had a representative of the Japanese Forestry Service in our midst.

1921 Camp Ground Development Starts: All indications point to another favorable year for camp ground development work in this District, as the following shows:

1. The town of Quincy has appointed a live committee of three to develop a public camp in the town limits. This will be largely used by the numerous tourists who visit the Plumas Forest.
2. The town of Auburn is about to undertake the development of a public camp at Tamarack Flat on the Tahoe. The Forest Service, through a lease from the S. P. Ry. Co., furnishes the land, the town to furnish the necessary funds.
3. And here is what Benedict of the Sierra says:

"The other day at a conference with the Madera Board of Supervisors they allotted me $500 for the purchase of material for camp grounds at Bass Lake. I plan to put this money into sanitation and water supply for the two camp grounds at the Lake, and will use mostly contributed labor for its construction, work starting as soon as we can get material on the ground."

The first law enforcement case for 1921 on the Shasta National Forest was pulled off March 28.

A hobo left his camp fire unextinguished on the State Normal School Grounds at Sisson. Word came to the office at 10 a.m. from the Standard Oil Company's employees, who had been asked by a local teamster to report the fire to us.

Chamberlain and Lorenzen started at once, and soon found that a man with team had camped nearby and was headed down the Sacramento Canyon. They caught up with him and he gave them a good description of Terrance Brannigan, the hobo, who had headed toward Weed.

Terrance was discovered coming south again from Weed and gladly accepted a ride back toward Sisson. He acknowledged his guilt before Justice Lawrence, who gave him sixty days in the county jail, explaining to Terrance that he was really being let off easily, as besides breaking State and Federal laws, he had camped on lands belonging to the State of California near a sign reading, "No Camping Allowed."

The State Normal buildings are situated in a stand of timber where a fire would greatly endanger them.--Shasta.

District 5 (Cont.)

Spanish Forester a District Office Visitor: Sr. Jose Elorrieta, the head of the Spanish Forest Service, has been in the District Office during the past week. He is especially concerned with the establishment and administration of the National Forests of this country, forest studies, and forest planting. Much of the planting work in northern Spain is of the Monterey pine and various species of Eucalypts; in central Spain, of the Scots pine; in southern Spain, of Cork oak, eucalypts and various pines. In Spain nearly every town has a communal forest, the revenue from which supports the physician and druggist. Cattle grazing by the residents is free, and the forests are badly overgrazed. Sr. Elorrieta is to try the introduction of some American species, notably the red oak, and the jack, Coulter, western yellow and Jeffrey pines. He has been in the United States three months and will be here till May.

The D. O. gives a Party: And believe us it was some party. Mr. Redington started the ball rolling with a short address of welcome, followed by responses from the Forester, Colonel Greeley, and Colonel Arnold of the Army Aviation Service. Mrs. Stoner and Miss Wiley each gave us a wonderful solo and Mrs. Beeks and Miss Wiley sang a duet. Then there were some clever cartoons shown on the screen by Paul Fair followed by a wonderful Mulligan and trimmings. The trimmings consisted of coffee, buns, ice-cream and cake. Dancing was enjoyed by all until the wee small hours. In addition to the service men from the Washington Office and three Supervisors, we had the pleasure of renewing acquaintance with a number of ex-service men and women from the San Francisco Bay Region.

The party was held at the Forest Hill Club House. In addition to the regular decorations Mr. Fair had installed the Forest Service set-up used at the State Fair. This, in connection with a number of live trees and several mounted deer, made a very attractive setting for the dance floor.

Public Camps Listed: The California State Automobile Association is getting out a booklet in which will be listed all public camps in California.

The first section will contain a list of all public camps maintained by municipalities, individuals, etc. The second will have a list of all the improved camps on National Forest land. Only camps which have been provided with sanitary conveniences, such as latrines, garbage pits, etc., will be listed.

This list will include 50 camps on 13 Forests.

Japanese Forester on the Job: Mr. H. Ueki, professor of forestry at Suigen, Japan, visited the office recently to get information on the distribution of trees and commerce in lumber from America. He is planning a trip from America through Europe and Asia before returning to his own country. He is accompanied by Mr. T. Takamatsu, a professor of law at Keijo. Professor Ueki had us all stumped with his broken English and expressions picked up en route to America, plus two days in the country. We see some interesting times ahead for all the foresters with whom these men come in contact unless armed with an interpreter.

Lumber Company to Cooperate in Fire Protection: On March 24 the Red River Lumber Company, through Mr. Willis J. Walker, notified the District Forester that the proposals which the Forest Service had made for the extension of its fire protection system to the lands of the company in northern California were accepted. This company is one of the largest owners of timber lands in the United States and one of the three largest in the State of California. Its decision to cooperate in fire protection is of far-reaching import to all Forest interests in the State.

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What We Need in Motion Pictures

By C. A. Lindstrom, Washington, D. C.

An Oriental proverb says that the distance between the ear and the eye is small, but the difference between hearing and seeing is very great. More terse and to the point is our own "To see is to know." These proverbs disclose the reason for the steady rise of the motion picture in the informational and educational field. In this fast moving world of ours, advantage must be taken of short-cut methods, and, since scientists tell us that 87 per cent of our impressions are received through the eye, it is but natural that advantage is taken of this open door. And in the use ot the eye, the still picture, the object lesson and the so-called "moving" picture, within their limitations, are far more effective than the printed page. All that printing can convey is mere fact--the picture leaves a vivid impression.

We in the Forest Service have used the still picture and, to some extent, the object lesson, but ours is a field which lends itself admirably to representation through the motion picture.

Proceeding on the assumption that public knowledge and support of National Forest policies is the primary aim of our publicity, what is it, then, that will create this support? Is it created by showing the public how we conduct lumbering operations on the National Forests, how millions of sheep and cattle are grazed on Forest ranges, how roads and trails are built, that tourists go by thousands to the Forests, or that game and fish are plentiful? Will the public be impressed with the mere fact that we enforce logging regulations which save a percentage of the tree from being wasted, or that stock leaves the Forest in better shape from having grazed under regulations worked out by the Forest Service? While such pictures have their merit and undoubtedly interest many people, we miss our opportunity unless our pictures appeal to the sentimental, as well as practical, in human nature.

What we need first are motion pictures to acquaint the public with the National Forests by showing what they look like. This should be done through pictures of selected beauty spots in various National Forests, but no reel should be made of scenery alone. A story with appealing human interest should run through each picture. Suppose, for instance, a picture of recreational uses of a certain Forest is to be made. It is not sufficient that a camera man go out with a Forest officer and take pictures of mountains, lakes, rivers, woods, and camping scenes. These pictures would all be very good, but only the surface of their possibilities would be scratched. How much better results would be obtained if a story is carefully prepared in advance wherein a man failing in health in a crowded city had been carried through to health and happiness amid these scenes in a National Forest. A purpose would then have been given the picture, and those seeing it would leave with that impression.

What We Need in Motion Pictures (Cont.)

And likewise with all National Forest activities. A purpose can be brought out, for instance, in a lumbering picture by showing contrasts. Many a lumberman has been forced out of business and whole communities have stagnated because of the dwindling supply of timber. Contrast this with the thriving communities who have behind them the assurance of a continued supply from National Forests. And so on through all our subjects. We need to bring out our points clearly, effectively, and dramatically if possible, and in an appealing rather than a matter of fact way, and for this reason every picture should be planned in advance and scenarios written and worked out as carefully and completely as are those of commercial concerns. Only in this way can we get the best results from our motion pictures.

Observation and Analysis

By Leon C. Hurtt--D-1

The ability to observe closely and to analyze carefully the problems with which we are confronted is not always fully exercised. I have often thought that the reasons for the lack of observation and analysis were failure to appreciate the value of this kind of mental agitation, and, possibly, to a lack of self-confidence. Self-confidence itself is in turn based largely on experience--in other words, upon observation.

It is fairly obvious, I believe, that our work, which is spread out rather thin over immense areas, and which deals largely with inarticulate plant and animal life, requires an unusually high type of observation and keen analysis to form intelligent conclusions and to shape a rational line of action based upon them.

The faculty of observation can be greatly developed by persistent practice. College education is not a necessary training before one can be a close observer. Keen observation is an acquired trait and a highly valuable one to the possessor regardless of his previous training. We probably always will have in the Forest Service college-trained men and those without that training. Such a personnel makes for balance.

We need highly trained men and specialists in various lines. I have noticed in some cases, however, a tendency to delay taking remedial action, where conditions were obviously wrong until the observations and the recommendations of a specialist could be secured. Such a condition is to be avoided. How about the proposition of each of us making a trained man out of himself? Observe, interpret and study things out. Did you ever stop to think how many of the higher positions in the Forest Service, as well as many other great organizations, are filled by men without special training, except that secured in the practical school,--graduates of the University of Hard Knocks?

Did you ever stop to note that these men are usually keen observers--men who have discovered facts--no matter in what way--have shuffled these facts up, picked out the ones that would serve to advance a line of work, hitched them up in various combinations, and made progress along the desired lines? Call to witness at this point such men as Abraham Lincoln, Thomas Edison, Charles Schwab, Henry Ford, and a hundred others who are listed in "Who's Who."

The spirit to lay hold of facts, understand them, to hook them up in teams and thus to secure a desired result, is one that enables men and organizations to do worth-while things and to set high marks which are pointed out as examples to shoot at for generations, perhaps, to those less fortunate who have not made full use of the process of observation and analysis as a vehicle for progress.

Putting Grazing Plans Into Use

By W. C. Barnes

For several years past investigative officers of the Branch of Grazing have been studying the ranges and making reports and recommendations for the future handling of the ranges involved. This, however, is but a part of the work. Observations and working plans are of absolutely no value if someone does not put them into effect. Right here is where somebody seems to have fallen down on the job, and, by that same token, right here is where we should realize that fact and apply the remedy, which is perfectly obvious.

Putting Grazing Plans Into Use (Cont.)

In our grazing reconnaissance work we have turned over to the administrative men the plans and recommendations, told them what to do and how to do it, and then gone on about our business, leaving them to wrestle with the proposition without further supervision or advice. In many instances the results have been disappointing.

A splendid example of how the job should be handled and the work of research and administration properly coordinated is found in a recent report by Supervisor Coffman of the California National Forest on a grazing study covering certain sheep ranges in that Forest. The work was confided to Deputy Supervisor Mace, who made the investigations, followed/~~it~~ them up with working plans, and then saw to it personally that the plans were put into effect. The results have been extremely gratifying.

Here we have a small, rather poorly watered and not particularly valuable sheep range, which for many years past has been allotted to an average of about 1,400 head of sheep with the usual number of lambs. Year after year the owners of these sheep have gone to this range, dumped the sheep into the middle of it, and then left the management of the animals and the grazing of the area entirely in the hands of the herders. Apparently the Forest officers took little or no interest in the results, although the record shows that year after year the sheep were taken off the range before the end of the season because, according to the herders, the feed was all gone and the sheep were falling off in flesh. Year after year, also, the permittee urged the Supervisor to allot him more range for his band, claiming that he did not have sufficient feed for the number of sheep grazed. Then apparently somebody in the Supervisor's office sat up and began to take notice.

Mr. Mace took hold of the proposition first as a grazing expert, and later as an administrative officer--a not impossible combination, by the way. He went over the range and its past history, studied the water, the forage, the slopes and exposures, and then worked out a plan of handling it based upon two small bands rather than one large one. He divided the range into two units. On one he established five separate camps, on the other eleven, so located and arranged as to allow the sheep to use them under the rotation system, beginning with the earlier ranges and systematically following them up as the forage grew during the season. Having worked out his plans as an investigative officer, Mace thereupon assumed the function of an administrative officer and saw to it that his plans were carried out by the permittees and their herders.

The result was that on this range, which never before had carried more than 1,400 head, all grazed in a single band, Mace grazed two small bands of approximately 800 head each for the full season, and when the sheep left the Forest they were in first-class condition and there was feed enough left on the range to carry them for ten or fifteen days more, had the permittees desired to stay. Compared with previous years, when the animals were grazed at their own sweet will, he succeeded in securing from this little range an increase of 41 per cent in the number of sheep-days grazed by both bands. In other words, he grazed more sheep for a longer period, turned them off in much better condition, and left the range still containing considerable unused feed.

We have now covered a goodly number of our Forests with intensive grazing reconnaissance. The maps, reports, and recommendations of the investigative officers are on file in the Supervisors' offices, but, unfortunately, mighty few of the recommendations have been carried out along the lines here described.

The methods used by Mace are not patented or copyrighted, nor are there any limitations that run against other ambitious officers taking hold of ranges in their Forests in the same spirit.

Please don't crowd, Boys, let everyone have a chance.

Density and Height Growth of Douglas Fir

By J. V. Hofmann--Wind River Exp. Sta.

A mature Douglas fir forest, which contains only 30 to 50 trees per acre, may have started with anywhere from 100 to more than 100,000 seedlings per acre. To insure clearing of the trunk and to produce clear lumber, there should be at least 800 trees per acre.

Density and Height Growth of Douglas Fir (Cont.)

The percentage of loss through natural thinning is very high during the first 30 or 40 years, and even at the age when merchantable size for poles and ties has been reached the stand is still so dense that one-half or more could be utilized in thinnings and, at the same time, the growth of the remaining stand would be increased. It is at this period that artificial thinning should be used if practicable, because the boles have cleared themselves and the competition between the remaining trees is keen. Stands even at 75 to 80 years old are thinning usually at the rate of 1 to 2 per cent per year.

The effect of density on height growth is shown by a comparison of measurements of height in stands of less than 2,000 and of more than 10,000 trees per acre. At 5 years, the less dense stands averaged 1.9 feet high, and the more dense 1.5 feet; at 10 years, 6.3 and 3.6 feet; at 15 years, 16.9 and 7.2, and at 18 years, 24.7 and 12.4 feet, respectively. The figures for dense stands are very close to the average height growth of Douglas fir seedlings, as obtained from measurements of 50.65 acres of good stands. Douglas fir seedlings have a more rapid height growth than any of their associated species. With a height of 2.1 feet at 7 years, it is evident that even at this age the Douglas fir seedling is well established. At 11 years old it is tall enough to overtop most of the underbrush and to receive the full benefit of the overhead light.

Too great density appears to cause retardation only, and not stagnation of height growth.

Natural Reforestation of Brush Areas

H. E. Haefner--Siskiyou

In the heart of the Siskiyou Forest in southwestern Oregon, there is a region about 25 miles long by 10 miles wide, on the Illinois River, that has had no bad fire since 1910. Many fires were started in this region, but they were extinguished before they became large and destructive. The region has been a mining country since the fifties and it has suffered great damage in the past from fire.

The cover is brush with many areas of scattered timber but with very little merchantable timber. The forest runs about 85 per cent Douglas fir and 15 per cent sugar and yellow pine.

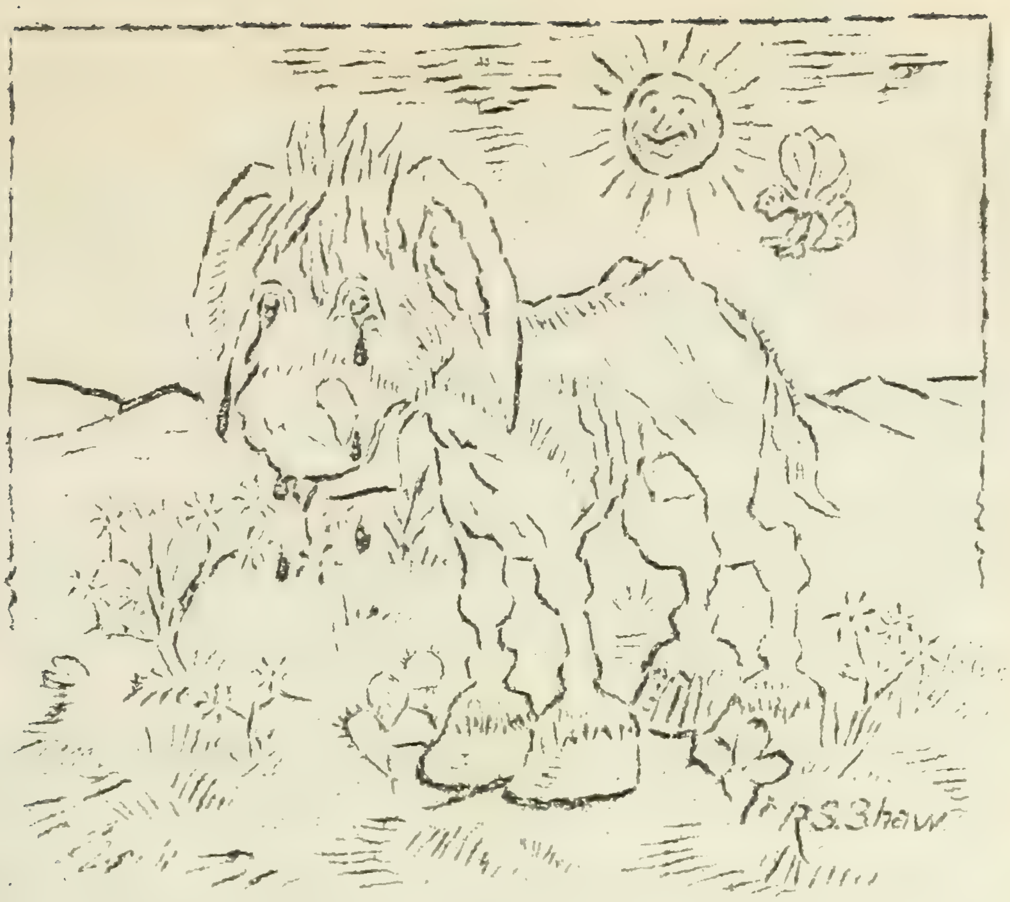
A large part of the country has not been burned over for around 20 years. During this interval of time young growth has come in beneath the scattered timber and is encroaching on the brush areas from all sides. Wherever a tree of seed-bearing age stands alone it is usually possible to find many seedlings and saplings around it. This process of reforestation will be more noticeable from now on, for before long many saplings will be old enough to take their place as seed trees.

If we can keep fire out for 15 years more we are going to have a big demonstration down in that part of the Forest of what fire protection will do toward reforesting a brush and scattered timber country.

New Legislation in Congress

What Congress is Doing: As is customary on the opening of Congress, practically all bills of interest to the Forest Service which failed of passage during the last session have been reintroduced in the House and Senate. Among these are the Snell Bill, land exchange bill, additions to National Forests, and invalid claims cases which have been previously reported on adversely by the Service.

Reclassification Bills introduced by Senator Sterling (South Dakota) and Smoot (Utah) will go first to the Senate Committee on Civil Service and then to the Committee on Appropriations, according to the compromise plan adopted by the Senate April 25. The controversy over which committee should have jurisdiction over these bills has continued for a couple of weeks and extended back into the last Congress.



THE LOCO WEED

Behold the floweret on the hill and in the pleasant, shady dell--'tis fairer far than daffodil, or flower of fabled asphodel. But like so beauty that we hear doth lie no deeper than the skin--a serpent lies beneath its lure--it hath a deadly kick within. My mule went forth one summer day to nip the grass in nature's bowers and in his wanderings by the [illegible] he nibbled at the little flowers. And thereby hangs a sorry tale--the floweret tasted mighty good--dire habit got him on its trail--he would not quit it as he should. Now day by day, in rain or shine, he goeth forth to pluck the weed, until this noble beast of mine is in a sorry plight indeed. No more for him the sun doth shine or robins sing a roundaley--he thinketh of the flower divine that tasteth better far than hay. No longer doth his manly voice sing paeons to the coming dawn to make the waking world rejoice, for all his joy in life is gone. His noble ears, his erstwhile pride, with which he all his thoughts expressed, now limply hang on either side his woeful face with look distressed. His face is sad, and wan and pale, his heels no longer flash on high, the flies no longer fear his tail, there is no luster in his eye. All day he wanders o'er the steep and fills himself with flowers galore--at night he mutters in his sleep--he is a wreck and nothing more. At my commands he does but scoff--he knows no law of rein or fence--I guess I'll have to kill him off, his hide might bring me thirty cents.--John D. Burt, in the Butte Miner.

WASHINGTON NOTES

Exempt Forests From Taxes: That freeing forest lands in Nebraska from taxation might stimulate the planting of forests, is the belief of Representatives Snow and Rodman of the Nebraska legislature, who have introduced a bill in the present session seeking to exempt State forest lands from taxation. This has passed the lower house by a large majority, but will require a constitutional amendment which must be submitted to the people for approval.

David T. Mason, professor of forestry at the University of California and formerly connected with the timber section of the Bureau of Internal Revenue and the Forest Service, will open an office as a forest engineer in Portland, Oregon, about May 1.

Washington Notes (Cont.)

Can a Chipmunk Climb a Tree? On page 447, "Smaller Mammals of North America," E. W. Nelson, Chief of the Biological Survey and probably the one authority on such matters says:

"They (chipmunks) sometimes climb beeches and other trees to gather nuts, even to a height of fifty or sixty feet."

Colonel Greeley and Assistant Foresters Headley, Carter, and Herbert A. Smith have returned to Washington from their western field trip.

Fire Photographs: Where are they? Do you know that our Service collection doesn't contain an A-1 fire picture taken during the past five years? Leastwise I've been unable to find any good enough for a rotogravure section, that haven't been used time and again. Smoke's a mighty hard thing to take well, I grant you, but isn't this a poor showing for the leading fire-fighting organization of this country?

And men working on the fire line--lots of 'em, all standing and looking at the camera. Pack trains all ready to go, with never a human being in sight, and so on and so forth. A fine layout for booming Forest Protection Week.

"No time to take pictures on a fire," you say. Sure, I know it, I've been there. But, take time. Putting out a fire is only one part of the game--public education is another. And if we make good on one, and lose out on the other, how much ahead are we? After all, isn't the cooperation of the public our one best bet against fires?--W.H.

FOREST PRODUCTS LABORATORY

When is the Best Time to Cut Timber? Many of the theories which have been advanced regarding the durability of wood attribute too much importance to the time of cutting. As a matter of fact, the time of cutting has very little effect upon the durability or other properties if the timber is properly cared for after it is cut. The method of handling logs at different times of the year, however, does influence their durability.

Timber cut in late fall and winter seasons more slowly and with less checking than during the warmer months, and when proper storage or handling is impracticable, winter cutting is best. Fungi and insects do not attack wood out of doors in cold weather, and by the time warm weather arrives the wood is partly seasoned and somewhat less susceptible to attack. It is for these reasons that winter cutting is advantageous, and not on account of a smaller amount of moisture or sap in the wood in winter, as the popular belief has it. There is practically no difference in moisture content of green wood in winter and summer.

Seasoning Wood by Electricity: Drying large sticks of green wood in a very few hours by passing an electric current through them is one of the newest experiments tried at the laboratory. The two wires of the electric circuit are simply attached to the end of the stick and the current turned on. The stick begins to season so fast that the water can actually be seen oozing out of it.

Seasoning wood by electricity costs much more than by steam, but the rapidity of the process partly offsets the increased cost. Furthermore, there is a limit to the size of lumber that can be dried by ordinary kiln methods; but when the electric method is used the size seems to make no difference, because the wood is heated from the inside out. It is possible that even logs could be dried by this process. Providing a source of cheap alternating current was available, wood in the log form could be dried right in the forest. With the development of cheap water power and high tension transmission lines, such a procedure may be possible. This would reduce the shipping weight, and the boards cut from the log could be machined to final dimensions for the use they are to be put.

DISTRICT 2 - INTERMOUNTAIN DISTRICT

Grazing Inspector W. R. Chapline of the Washington office spent a day in Denver recently going over the plans for grazing studies work for the coming season.

Women Excel Men: An interesting comment on the results of the educational course in Grazing is the fact that the women clerks on the different Forests and in the District Office give the men of the Forests a pretty hard run for the higher percentages. The examiners have not yet been able to come to any definite conclusions as to the reasons for this unless it is that the women are naturally more studious than the men. Perhaps the explanation lies in the old time observation that girls generally do better than boys in school.

Supervisor G. E. Marshall of the Minnesota Forest, while cranking a Government 2-ton truck, had the misfortune to have it backfire and break his right wrist. It is necessary for him to have it in splints for about three weeks and he will have difficulty in using it for several months.

The Fire Situation in Michigan has been temporarily relieved by rain and snow, but the trouble has been transferred to Minnesota, as indicated by a telegram from Supervisor Marshall to the effect that the country is full of smoke and he has had to put on emergency patrolmen.

Forest Protection Week plans are well under way. Governor Shoup of Colorado has issued a proclamation, copies of which are being sent broadcast over the State. Other material is being prepared. A Committee of Twenty, representing the different business interests, clubs and ministerial alliances of Denver, met and discussed publicity plans. Nearly all took part in the discussion and showed a keen interest in the movement.

The President on April 13 signed an executive order transferring the Fruita Division of the Uncompahgre to the Battlement National Forest.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Tonto to Have Noted Writer for Resident: Zane Gray, the noted novelist and writer on western themes and scenes, was so taken by the Tonto Rim country on his recent hunting trip in that region, that he has started the construction of a hunting lodge on the head of the Tonto under the rim.

Conditions Recall Days of 1904: Ranger Woodrow is authority for the statement that the Forest has never been so dry and lacking in snow since the year 1904. Old timers in the Service, such as Kerr of the District Office, and Douglas of the Datil, as well as Ranger Woodrow, will recall the fire season of 1904, when thousands of acres on the Mogollons and Black Range were burned over and the fires could not be checked.

Mulder Completes Tyrone-Big Burros Job: Assistant Engineer Mulder has returned after completing construction of the 2¼ miles of the Tyrone-Big Burros project. While the town of Tyrone has been depopulated by the recent copper market calamity, a fine piece of graded road awaits the return of the local people and in the meantime will be of use to ranchers and Silver City people. The character of the road and its cheapness of construction will be an advertisement for the Service and will react favorably in furthering more county cooperation.

The 2¼ miles of road were built for $1,600, average width being 14 ft. with an additional two feet ditch. Of the total distance, one mile was new location and the balance was reconstruction of an old road. Thirty-eight hundred yards of earth were moved at an average cost of 16½ cents per yard.

Source of Roosevelt Bass: According to an article in April "Outers Recreation" many of the black bass with which Roosevelt Dam on the Tonto was stocked came not from Government fish hatcheries but from fish salvage operations on the upper Mississippi, where the annual floods receding leave millions of bass, perch, crappie, and other species of fish to die in the shallow side ponds which soon dry up. In 1920 these salvage operations saved over 116 million fish, of which over 100 million were of the game varieties. These fish are salvaged at a cost of 21.7 cents a thousand.

District 3 (Cont.)

Nursery Stock Well Received on Sitgreaves: The shipment of 600 trees from the Gallinas Nursery went like the proverbial hot cakes. A portion was sent to St. Joseph, some distributed in Holbrook, but the most of them adorn the premises of various residents of Snowflake and Taylor. Most of the people expressed appreciation and interest in the planting of the trees.

Fame of Prescott Travels Far: Prescott hath her charms. Recently Supervisor Wales received an application from a lady in Constantinople, Turkey, for a position as "Lookout." Unfortunately the applicant will not be in America until June and not available for lookout duty until August. Then, too, come applications from the Atlantic Coast, from Massachusetts to Florida, and closer home, from Illinois.

Man-planted vs. Man-thinned: A tourist who camped in the Payson Camp Ground last night told me that in six months travel in the Southwest he had found only one camp ground that exceeds the one at Payson in size and convenience, and that at Alamogordo, N. M. I thanked him and informed him that the trees at Alomogordo were man-planted while these had to be man-thinned to permit the parking of cars and gave him some publicity matter and he went rejoicing on his way.--R.C.J.

Drought Causes Cattle Shipments: The G O S Cattle Company shipped 3,000 head of cattle last week to range in northern New Mexico, because of drought conditions and shortage of feed prevailing in this vicinity. This is the first shipment of stock from the Forest this spring.

Cheney Talks to El Paso Organization: On April 14, Forest Examiner Cheney addressed the Young Men's Business League in El Paso on the general subject of term permits in the National Forests and the special matter of summer home opportunities on the Lincoln National Forest. The League contemplates building a lodge somewhere on the Lincoln this summer.

Lincoln Fire Education Plan: The Sitgreaves and Coronado have both adopted the Lincoln Flag competition plan for spreading forest fire education among the public school children on or near the forest. On the Coronado, 42 schools have been asked to participate in the contest.

Sign Shop Preliminary Report: A preliminary report just received from Ranger L. D. Blodgett, who was in charge of last winter's sign shop, shows an output of 3,349 signs. The shop closed March 31. All signs this year were coated with spar varnish. Cost figures have not yet been compiled.

An Argument for a National Forest Vacation: The wild sea waves are saying the same old stuff, and you wouldn't notice that probably every grain of sand on the beach has been replaced by another just like it; many of the same old girls will be there, just the same or more so. Resolve that you will spend your vacation in the Catalinas or the Santa Ritas; if you have no family to take along, there is a dame who will go with you and minister to your every good--Dame Nature.

Many thousands of dollars are spent by Tucsonans every summer at distant places, and the return is only one of fleeting pleasure that dulls and tires and jades; spend your vacation in the nearby mountains, and you will not only conserve the community wealth, but you will make yourself fit mentally and physically for the fall drive of prosperity.--Arizona Daily Star.

Ranger Bill Says:

I hope they don't take all the "class" out of Reclassification.

What's become of the old-time Ranger who knew more about a horse than a jitney?

The new For. Asst. lost his can opener on the last field trip and li to starved.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Slump in Wages: A canvas of the wage situation within and adjacent to the Salmon Forest shows that there has been a considerable reduction in wages in many lines of work. This spring ranchers are paying $40 to $45 per month and board for ordinary ranch hands and $60 to $75 per month and board for six horse teamsters, irrigators and sheep and cattle herders. At Gilmore and other mining camps miners are receiving $4.50 to $4.75 per day, and muckers $4 to $4.50 per day without board. Loggers in this vicinity invariably work under contract at a stated price per M. ft., B.M., the following prices per M., being standard:

Sawyers $2.50 to $3.50, according to class of timber, topography of the country, etc. Hauling $6 per M. Sawmill laborers paid by mill owner, $3 to $3.50 per day and board; firemen $4 to $4.50 per day and board.

Campaign Against Horse Trespass Supervisor McGowan of the Toiyabe has initiated an extensive campaign to eliminate horse trespass. It is desired by the Forest Service and Advisory Boards that no stock should be allowed on a certain district before May 1. However, certain owners of horses did not take the matter very seriously and allowed their horses to graze during the month of April on the range in question. Supervisor McGowan is rounding up all of the horses on the range and putting them in an enclosure. As soon as the job is completed, he expects to call upon each owner to pay the damages and take the horses from the Forest and keep them off. Anyone who does not care to come through, will be arrested and taken before the nearest U. S. Commissioner or Justice of the Peace.

Scouts Take Initiative in Tree Planting: The Boy Scouts and Scout Masters of Troop 40 have as their motto a sentence something like this: "Who waits to imitate deserves no credit." Believing firmly in leading, this small troop expects to set an example in tree planting for the rest of Salt Lake City. They have obtained permission from the property owners on all four sides of the city square to remove the old Lombardy poplars and replant a better species. They have chosen the American sycamore and will pay the expenses incident to this work from the proceeds of ten acres of potatoes raised on land and with water donated by the city. We have been asked to help them with plans for the landscaping of the new eighth ward meeting house, which will be the starting point of this work.--Wasatch Newsletter.

Study of Spring Ranges is Now On: All the Grazing Studies force from the District Office are now in the field on a study of spring ranges. There are a lot of angles to this study. It has been shown conclusively by Doctor Sampson that early frequent cropping of the forage will result in the devitalization of the plants in the first place, and within a few years, their elimination. However, early and close grazing in the spring will probably not result in the permanent impairment of the forage, provided the plants are given a chance sometime during the season to make a fair growth.

The information generally on record with reference to these spring ranges is certainly most meager, and in fact, if our present Ranger force were to resign, perhaps on the majority of our spring ranges, we would have to start at the beginning in the study of conditions and remedies. Let us get more information and make the matter of record, and let us start this spring to get it.

DISTRICT 5 - CALIFORNIA DISTRICT

Giant Falls: The "Lafayette," tallest tree in the Calaveras grove of big trees in the Stanislaus Forest, has been blown over by a storm. The great tree was 300 feet tall and had a diameter of thirty feet on the base.

The caretaker incharge of the hotel at the grove during the winter, states the building was shaken last February by what he supposed was an earthquake. A few days ago the receding snow allowed inspection of the grove and the 300-foot tree was found prostrate.

The Emperor of China, who used to plow a furrow each year in order that his subjects might learn not to despise labor, has nothing on Supervisor Allen of the Angeles, who recently spent a day on the Lytle Creek fire line in that Forest, showing the boys how he used to grub brush "in the old county." Of his expertness with the shovel and the brushhook we are not qualified to speak, but for plain and fancy grubbing we will back him against all comers.--Angeles.

Building Site Donated to the Cleveland: The Chamber of Commerce of Corona has agreed to donate a fine building site just east of the city limits of Corona along the main paved highway for the headquarters of the Trabuco District of the Cleveland Forest. It is planned to construct headquarters buildings on the two lots that are to be given to the Service shortly after the opening of the next fiscal year.

A Most Profitable School Excursion: That our exhibit for the schools of San Francisco was appreciated is becoming more apparent all the time as comments come in from the teachers and pupils. A teacher in the Portola School writes as follows:

"The visit to the exhibit was one of the most profitable school excursions it has ever been my pleasure to conduct. May I hope that it will be repeated this year? I am sure it would prove a potent means of teaching an appreciation and proper use of our great National Reserves."

Radio Operators for Air Patrol: Radio Engineer Richards of the Air Service, stationed at Mather Field, is receiving applications and selecting qualified amateur radio operators for assignment at the Supervisors' headquarters this season.

All amateur radio operators are registered with the Government and he is sending a circular to all those in California, giving them a description of Air Patrol work.

After he has selected qualified and properly equipped men, he will turn their names over to the District Forester and the men will be definitely hired and assigned to Forest headquarters where they will be under the direct supervision of the Forest Supervisors.

It is expected to secure amateur radio operators who have been receiving equipment of their own and who wish to get experience for the summer. It will be their duty to be on the job continuously while planes are in the air on patrol routes, so that they can pick up any messages that may be sent from the planes and deliver them immediately to the Supervisors' offices.

Added Protection for the Trinity: In accordance with an agreement made with Mr. Neale of the Fish and Game Commission, two men will be stationed at Forest Glen, one of these being paid by the Commission and one by the Forest Service. Work will be so planned that half of the joint services will be for fish and game work and half for forest fire protection.

Last year there was a veritable epidemic of game violations in this vicinity. The territory is too great for the regular Deputies to cover and we are glad that this extra assistance is forthcoming for the ensuing season.

Is Your Reading Worth While? From years of observation of the close relation between the sort of reading habits Forest men develop in their leisure minutes, and their growth in the Service, the writer ventures to make a brief suggestion. Lighter reading, after severe technical studies, may best be had in the bright, well-written out-door articles which are more and more abundant in the periodicals.

Detective stunts and sensational treasure-hunt novels are mighty poor stuff for healthy men to waste time over. But a standing order can be placed with a newsdealer for copies of all magazines that contain forest articles. This would have brought, in recent weeks, the "North American Review," with a thought-compelling article by Gifford Pinchot; the "Country Gentleman" with Ritchie's stories; "All Outdoors" with lots of "conservation" comment; also the "American-Scandinavian Review," with Axel Schura's "Letters of a Swedish Forester," who visits the Rockies and Sierras. He says things like this:

"It will be funny to see the result when I start Americanizing the Swedish Forest Service. Probably I'll get fired if I say to the Chief Forester, as I have heard a Ranger say to the District Forester, 'Hello, Charlie, how's everything in the old shack?"--Charles H. Shinn.

DISTRICT 6 - NORTH PACIFIC DISTRICT

The Olympic Windthrow from the Air: The District Forester was an interested observer from the "hurricane deck" of a 4 B DH ship on March 28 of the timber destruction on the Olympic Peninsula. They flew from Camp Lewis west, struck the area, then north, circled back over it, and back to Camp Lewis, being in the air two hours and fifty minutes. He reports that the windthrown areas are very spotty, in some places practically all down, in others only a percentage. Three Air Service planes arrived in Portland on March 25, from Mather Field, to make an aerial survey of the windthrown area. The machines were piloted by Capt. L. H. Smith, Lt. E. C. Kiel and Sgt. De Garmo, who all were on the Forest Patrol in 1920. Mechanicians (Sgts.) Cornish and Burman were on the 1920 Patrol; Sgt. Thomas was a photographer. The Air Service sent the planes at the request of the Forest Service. They completed the survey on March 30, and returned to Mather Field. A large number of photos were taken as well as sketches made of the area.

(The latest estimates of the damage done by the cyclone place the loss of timber on State, Indian Reservation, and private lands at approximately si billion feet, and on the National Forest about 750 million feet.--Ed.)

How Much Does a Squirrel Eat? The Columbian ground squirrel, found on the National Forests of eastern Oregon and Washington, consumes per animal during 130 days from March 22 to July 30, fifty and one-third pounds of wheat. At this rate 385 squirrels would eat the amount of pasture necessary for one cow for one day, or 96 squirrels would devour the amount of pasture for one sheep for one day. Large numbers of squirrels have been poisoned during the past year on the D-6 Forests by the Biological Survey.--J.L.P.

A Hoo-Hoo President: It may interest those Forest officers who belong to Hoo-Hoo to know that President Harding is a member of that order, his number being 14945, and that he has been for many years financially interested in the lumber business in Ohio.

An Unusual Fire Trespass Case has arisen on the Wenatchee. A man was burning brush in May, 1920; sparks from his brush fire started a fire on National Forest land. Some six acres of Government land were burned over. Actual cost of putting out the fire was recommended as damages, amounting to $122.00. The trespasser being pretty hard up for cash has offered to work it out!

High Water on the Umatilla: Chinook winds and an abnormal amount of rainfall in the vicinity of Walla Walla and Pendleton have caused several periods of unusually high water in streams having their origin on the west slopes of the Blue Mountains in the Wenaha Division. One storm caused considerable damage to grain fields and in places gullies from two to six feet deep were washed out by surface water. At the intake on Mill Creek a precipitation of 3½" was recorded during one day in March.

A Use for Solar Heat: Heretofore insect control work has often been suspended in the late spring because of the advent of the fire season and the consequent danger of burning infested bark. Recent investigations in southern Oregon and California by the Bureau of Entomology show that if infested yellow pine bark is exposed to the sun with the inner side uppermost, the heat of the sun's rays in the late spring or early summer is sufficient to kill the larvae and pupae of the bark beetles.--A.J.J.

Maintenance a la Wheelbarrow: The Santiam force is figuring on trying a new stunt in trail maintenance work this spring. A highbrow wheelbarrow with motor-cycle wheels and tires has been built and we expect to try it out as soon as the trails are in condition to work on. This wheelbarrow is longer than usual, with boxes and housing in front, the wheel set farther back than in the usual vehicle, so that the load can be shifted to balance and rest mainly on the wheel. It is made of spruce and maple and is very light and strong. It is believed that two men can handle this wheelbarrow, taking from two to three hundred pounds thereon, which will be sufficient equipment and provision for from a week to ten days.

DISTRICT 8 - ALASKA DISTRICT

The Tongass Tells the World: Just a few of the really big things in National Forest business in Alaska:

The largest body of timber ever offered for sale in a National Forest--2,000,000,000 board feet.
The largest fleet of motor boats in the Service, seven in all.
The finest inland waterways in the world.
12 feet rainfall.
Scenery unsurpassed.
12,000 miles of shore line.
4 large pulp and paper mills planned.
1 pulp mill operating.
62 salmon canneries with a total pack for the year 1919 of 153,548,792 cans.
7 town sites surveyed into lots and occupied under special use permits.
5 Ranger Districts with an average area of 3,089,907 acres.
11 permanent employees.
1 Fire Guard.
Net receipts for 1920--$94,210.23.
Average temperature during the winter months of 29 degrees above zero.

All In the Day's Work: Deputy Supervisor J. P. Williams of Juneau was reported 15 days overdue from a field trip to Seymour Canal. Word was wired to all towns to have fishing boats keep close watch for him. Launch Ranger No. 5, stationed at Sitka, and Launch Ranger No. 1 at Ketchikan were ready within five hours with supplies for at least a two weeks' trip to start search. The U. S. Bureau of Fisheries at Juneau started their launch, Murre, out to search Seymour Canal and vicinity, but fortunately met Deputy Supervisor Williams coming in. He was delayed ten days by a Taku wind and engine trouble.

Foxes: Observation Island, about 1½ miles from the ocean dock at Cordova, the headquarters town of the Chugach, has been taken over for a fox ranch under a special use permit. The island contains about 160 acres. The applicant is already building a cabin and feed houses and expects to put four or five pair of blue foxes on the island this fall.

Service Bulletin
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FOREST FIRES AND RESPONSIBILITY

By Col. W. B. Greeley

The Washington "Expeditionary Forces" have completed the circuit of the District offices and returned to their base without casualties. New facts and impressions have poured in so thick and fast that a process of absorbing and comparing is necessary to put them in order. But some things stand out as of conspicuous importance.

For one, the Forester is fully "sold" on Ranger and Forest work-plans. The excellent results already obtained from systematic planning of the use of time by Rangers and Supervisors have convinced him that the work-plan is a strong lead in bringing the Service up to its highest effectiveness. Ways and methods are less important than getting the idea of systematic planning. Obviously the man who makes the plan must be the man who is going to do the work or be in immediate charge of it. No scheme of planning will succeed which does not rest upon the brains and experience of the men who are close to the job.

Systematic planning is the key to the question of how to make the number of men we have go the farthest in meeting the varied demands upon the Service and in their order of urgency. In many Ranger districts, plans for the use of time, carefully prepared, will show not only that all current work can be well done but that new work can be taken on. In other cases the work-plan will show how the time which it would be desirable to give the various activities can best be scaled down to make the man-days actually available count the most on the things which we can least afford to slight.

One thing that has been made very clear by the conferences is that standards for doing work, particularly time standards, are inseparable from the work-plan. The Forest Service will never outgrow the point where its chief reliance will be the initiative and common sense of the men on the ground. Yet we must have certain standards, adapted to the needs of each Forest or locality. It is not fair to the man on the ground to hold him responsible for a lot of timber sales and stock ranges and a big protective job unless we have a clear conception of the time required if these various responsibilities are to be well met. Particularly can we not hope to build up an air-tight protection of the National Forests, which stands above every other goal, unless we can put down definitely the time required by the men responsible for the protection organization and see to it that the days needed are actually available for this specific job. I hope to see a systematic development of time standards covering our most vital activities. I want to see the men on the jobs take a large part in determining what these standards should be and build up their work plans accordingly, taking each demand in the order of its importance. I want to see the Forest Service outgrow breakdowns in fire protection or other essential work because the time needed to keep up these essential activities was not provided in the season's planning.

First and last, responsibility for fire protection was discussed more fully at the District office conferences than anything else. Many things about the fire work of the Service are encouraging. The splendid showing made by a number of Supervisors and Rangers in the face of a peak load of scores of lightning fires is one of them. The progress in law enforcement, the most effective thing in overcoming public negligence, is a second. The splendid cooperation being obtained from local residents, in several localities, as part of the "first line" of fire detection and suppression is a third. The steadily improving cooperation with the western States, as illustrated by the new fire law of Arizona and the progress in slash disposal in California, is a fourth. The better financial cooperation on the part of large private owners is a fifth. Our work in Public Relations is bearing fruit in the exercise of greater care by campers and travellers. All of these things go to show that we have it in our power to put across our biggest job if we but work hard enough and steadily enough at it. The good fire record of a number of National Forests in the danger zone, sustained year after year, confirms this belief as a practicable attainment rather than a dream.

And yet we still have much to do right within the Forest Service. The men in the field are still taking chances in the fire game. The average figures on time elapsed between the report of a fire and the get away run on many National Forests into several hours, delays explainable or justifiable in certain cases, but in many others attributable only to negligence in preparedness or a lack of keeness on the job. We have far too many "over-night" fires, reported in the late afternoon or early evening, but with no get away until the following day. Some of these, of course, were justified, but many of them were not. Too many of them were due to the unwillingness of the Ranger or Guard to take a hard ride or hike by night or to his proneness to "figure himself into a good night's sleep." Too many Class C fires have become such, not because of acts of the Almighty, not because we were undermanned, but because some lookout station did not function, some telephone line was out of order, some fireman did not know what to do, some Guard or Ranger waited to get a crew instead of sending for help and hitting the fire himself, some one took a chance that the fire would not run and went for food or sleep when he might have hung on and dug for a few hours longer. The organization was there to hit these fires "quick and proper," but they got away. If fires of this kind were caught and put out when small, the destruction of public property entrusted to our care would be greatly reduced and it would seldom be necessary for the Forester to go to Congress with a request for deficiency appropriations.

I do not overlook the splendid work which many Forest officers have done; but at many points the Forest Service needs to buck up. I do not propose to lay down rules at my desk in Washington which the man on the job is to follow. The job is his and the responsibility is his to take the prompt and effective action which the situation calls for. But I do want to take this opportunity of saying to all the men in the Service what I have said to each District office staff, that I want to see the whole organization on its toes in the fire game; that I want to see every one filled with the spirit of hitting the fires quick and small; and that to the extent that the notion prevails anywhere that large fires are a matter of course, that they are nothing to get particularly lathered up about, that we will take a chance on handling the fire tomorrow because fire does not usually run fast in that country, I want to see that idea killed once and for all. We have a hard job, probably the hardest job in forest protection that any organized public service the world over ever tackled. But we can get on top of that job and master it if we all take it seriously and go at it with the sort of fighting spirit which the Forest Service has always shown when the job was put up to it squarely.

Just a word about responsibility. Responsibility means doing just these things which it is within the power of the men on the ground to do if their heads and their feet are working right. A District Ranger or Supervisor may have "redeemed his responsibility" fully and still have bad fires which it was beyond his power to prevent. Another District Ranger or Supervisor may have failed in his responsibility, although the showing in acres burned was small. It is not redeeming responsibility to take chances and be negligent in preparedness or inaction and then get by through good luck. The idea which I want to drive home is that of responsibility for doing specific things, beginning with the organization of cooperation and the proper placing and instruction of firemen, the things which will deliver the best protection that the organization is capable of delivering. I want to see the men who fail to do these specific things held to account for lack of preparedness or of prompt and effective action when fires occur, whether the resulting losses are large or small. Nor do I wish to dodge the responsibility which rests upon the Forester himself. What it is up to me to do I want to have brought home just as clearly and specifically as in the case of the men on the ground.

Our fire job is our biggest outstanding duty. It takes the preference over everything else. We can put it over if we all put our shoulders to the wheel; and we are going to put it over. It is simply up to every one to get into the game and play it hard.

One Saw - $2.94

By W. B. Crites, D-4

Property, according to Webster, is a very intricate thing, but according to the Standard Dictionary it is defined as:

"Anything which may be owned."

This definition would appear more suitable to our needs as there is something tangible to the sentence. However, what is to be discussed is what is termed in the Forest Service NON-EXPENDABLE PROPERTY.

The Department of Agriculture, under date of June 1, 1916, issued what they termed "Property Regulations" and in which they define non-expendable property as:

"Non-expendable property, comprising (1) property of a permanent character, such as instruments and furniture, and (b) articles that are worn out by use, but slowly, such as shears and carpets."

The Forest Service has charged on the records of its various Auditors, several million dollars worth of non-expendable property, only a small part of which is accounted for under what is termed the "Permanent Improvements." This property has been acquired in one of three ways, viz: purchase, transfer, or gift. By purchase is the one way in which property is most usually acquired and which takes the most work to finally appear on the records.

To start with, a Forest has say 14 saws on the records and 10 Rangers. Well, some of the saws are worn out and should have been sharpened up but haven't. Two of the rangers don't happen to have saws. Ranger Bill has to spend a day fixing some drift fence. He gathers unto himself his tools and finds he has no saw. Says Bill to himself, "I'll buy one." He does. A slip is made out by the store man. (1 saw, $2.94) (first error). Bill takes his saw, does his work and when back at the station throws the slip in his drawer until he has something going to the "Super." when he O.K's the slip and sends it in.

The Clerk gets the slip and holds it until such time as he makes up the bill (Form 5-a usually) and then attaches the store man's slip to same and after proper signature it is sent in to the District Fiscal Agent, who audits and pays same, sending the copy of the Form 5-a to the Property Auditor.

The Property Auditor notes the item of a saw on the Form 5-a and cusses Bill. "Why in thunder can't Bill use his dome and think that possibly there is some other kind of a saw in the world than the one he bought!" The outcome is that the Auditor sends the Clerk a slip headed "Request for Information" and politely asks the kind and possibly the length, and possibly whether cross-cut or rip. Mr. Clerk then passes the buck to Ranger Bill. Well, Bill has left the saw at some station where he expects to visit in the fall, and so takes a shot and says "Cross cut." (Of course, this is an extreme case. If there were no extreme cases this story would never have been written.) The request for information goes in and finally is sent back by the Auditor as to whether hand or log. Finally, after Bill has had another chance he states "Hand" and finally the Auditor writes "Hand, cross cut" on the Form 5-a copy and abstraction and charge is made.

All the above would have been avoided if Bill, when purchasing the saw, had had the ticket made out by the shop man as "1 saw, hand, cross cut. $2.94."

Perhaps all mer least those of us who live pretty close to the field, have at some time or another become highly enthused about the use of gasoline-propelled vehicles in some form or another as a means of transportation for patrolmen, firemen and fire-fighting crews.

The track speeder, the motorcycle, motor boat, automobile, truck and airplane have all in turn risen to varying heights of popularity. Right now the airplane as a vehicle for patrol and for carrying a moving detection force is perhaps riding the crest of its fame. Its limit of worth to fire control, however, is yet to be identified.

There was a relatively long lapse of time between the date the automobile and motorcycle arose to their respective peaks of favor--the time when we held the idea that with automobile and motorcycle at hand the day of successful fire control had arrived--and the advent of the airplane. The automobile and motorcycle during that interval found their exact niche in the play, and their use has settled down to a matter of course basis. Not true, however, with respect to the airplane. Before our enthusiasm over the plane has even commenced to cool, up bobs the blimp competing for a place in the air.

H. R. Flint, Fire Chief in District One holds credit as the first Forest officer to recognize the possibility of real value in the dirigible as a vehicle for transporting fire crews and supplies, and as a means of effective patrol and detection service. If Flint is not the first officer to see the value of the blimp, he at least can be given credit for having the courage to first publically announce his opinion.

In the fall of 1919, Flint corresponded with a concern in the East about the use of a lighter than air machine. The lead he was following on its face appeared to contain much merit though later developments proved that the outfit was entirely without resources, even to the extent of owning a "ship." Consequently, the maiden venture failed at the outset.

Next comes the Goodyear Tire and Rubber Company of California with an advertisement of a Pony Blimp which seems to embrace all the merits as a ship of the air that have been won by the Gibraltar of the Army--the mule.

Here are some of the points claimed for the Pony Blimp which give it, or a dirigible constructed along similar specifications, a favored place for fire control work among the list of ships which ply the air.

(a) Wide cruising range--8 hours.
(b) Speed from one to 45 or 50 miles per hour.
(c) Practicability of bucking stiff winds successfully. (In the teeth of a thirty-mile wind the Pony Blimp can make about 10 miles per hour.)
(d) Controllability with reference to elevation. (It can successfully fly within 50 feet or less of the earth as well as at elevations of several thousand feet. Its low flying limits are an asset of no mean value to fire patrol and delection).
(e) Small radius required for maneuvering the machine, making possible a landing on a very small plot of favorable ground.
(f) Practicability of holding ship nearly stationary close to the earth.
(g) Practicability of discharging passengers by means of a rope ladder as the machine hovers "humming-bird-like" over a selected spot.
(h) Practicability of tying it to a fixed object thus holding it in captivity while the crew is absent fighting fire.
(i) Practicability of transporting supplies and discharging the cargo near point of need.
(j) Relatively low operating costs.

At the present time the Goodyear Company has no ships in stock, but is constructing one which will have a passenger capacity of three or four people in addition to the pilot and mechanic. It will be equipped with a Lawrence motor developing about 75 H.P. The operating cost of the machine will be about as follows, according to figure given by the Goodyear Company,

Hydrogen				
Gasoline	8 "	28 gal.	.30	8.40
Oil	8 "	1 "	.60	.60
Pilot	8 "		1.25	10.00
Mechanic	8 "		1.00	8.00
Depreciation	24 "			27.50
2 Watchmen	16 "		.50	8.00
				$68.50

This makes a cost of 24¢ per mile, covering the total maintenance, etc., of the ship for 24 hours time, or the actual cost per mile flying, during flying time, is $2\frac{1}{2}$¢ per mile.

The sale price of the ship will be about $12,000. The bags are charged with hydrogen gas. About 20,000 cubic feet per month is required to maintain sufficient buoyancy. The hydrogen is sold in steel containers at the present prevailing price of about $6.50 per thousand cubic feet to the Government. Each container holds 191 cubic feet. It is commonly available in large quantities in Denver, Salt Lake, Butte, Seattle, Portland, Oakland, Los Angeles and El Paso.

The piloting of the machine is rather more complicated and technical than that of an airplane. The pilot of a blimp not only has his motor and steering apparatus to control, but in addition, the gas pressure in the bag. To maintain the proper relation between the weight of the cargo of the ship and the buoyancy of the bag at varying elevations, air is admitted to the hydrogen. This operation requires pretty highly developed skill and knowledge.

During the fire season of 1920 the City Forester of Los Angeles made several cruises over the Angeles National Forest and adjacent territory in the Goodyear machine. He is very favorably impressed with the possibility of the blimp and believes that all said about it to date, with reference to its place in fire patrol work, is conservative and well placed.

Bigger Calf Crop in Range Herds

By C. L. Forsling, Washington, D. C.

The benefits from better methods of range management and handling stock were further evidenced in the calf crop on the Jornada Range Reserve in 1920. The report of Grazing Examiner E. W. Nelson shows an 68.8 per cent calf crop from the special herd of approximately 400 cows on the Reserve and 81 per cent crop from the larger herd of 1,150 head. These are the best calf crops on the Reserve since the Forest Service began the investigations in 1915. The calf crop in a herd on similar open range under private management was only 71 per cent in 1920, which is considered a good average for range similar to the Reserve in southern New Mexico for 1920.

Since the Southwest is primarily a breeding country, the maximum number of calves per hundred cows is of importance to best success in the business. The average calf crop for New Mexico and Arizona, however, will probably not average over 60 per cent over a period of years under present methods of management, and is much less during periods of drought. One of the important phases of the investigations at the Jornada has been to work out the possibilities of increasing the percentage of calves obtained. The period covered by the studies so far includes three years of one of the worst droughts known to the industry in the Southwest, and while this materially reduced the calf crops the results on the Reserve have been much better than average for the region during the same period. The average in the large herd on the Reserve from 1916 to 1919 inclusive, was 57 per cent and in the special herd 70 per cent. At the same time, however, according to the best data available, the calf crop in southern New Mexico did not average over 40 per cent. The calf crop on the Reserve in 1920 is indicative of what should be possible during good years if better methods were used.

The low calf crop on the outside range is due mainly to overstocking and poor management so that there is little feed left for use by the breeding stock during spring and early summer before the rains start, and to poor distribution of bulls on the range during the breeding season. During the spring cows on the range, especially those with young calves, get so poor that many do not get back into condition to breed the following summer. A great many that do get into condition are not bred because bulls and cows may be widely separated on the range.

On the Jornada Range Reserve the aim has been to overcome these adverse conditions. In the special herd on the Reserve cows may have been kept in good condition through the spring by reserving pasturage for use during late spring and supplementing this forage with a small amount of concentrated feed such as cottonseed cake. Only good vigorous bulls were used in the herd at the rate of four per hundred cows which is considered sufficient for this fenced level range. A cowboy spent about two-thirds of his time riding in the pasture where the special herd was being grazed to see that bulls were properly distributed among the cows.

Although the results have been obtained in the semi-desert ranges of the Southwest, the better practices are applicable to some extent on Forest ranges as well. Premature grazing during spring would no longer be a problem on some Forests if permittees were induced to hold some early range down off the Forests in reserve for this critical period of the year, or to lay in a sufficient supply of feed in the fall to carry all stock up to the proper opening of the grazing season on the Forest, or both. In this way heavy losses would often be avoided and the calf crop would be increased, to say nothing of the benefits to the range.

Some stockmen argue that salting away from water to secure the more even utilization on the range desired by the Forest Service will result in lower calf crops and wide distribution of stock on the range. If the range riders employed to keep stock properly distributed on the range kept the bulls properly scattered as an incidental part of their regular duties, the calf crop should be up to the average or higher.

FIRE

Fire is a vampire, with no life beside
  The feeding on the hurt of other things;
It's strength arises on destruction's wings:
  It's beauty is the ghost of that which died;
It's joy leaves only ashes for its pride.
  Where fire doth walk, there grey death flings
A shower of vain and silenced sufferings,
  And mercy lies forgotten and belied.

--Clare Shipman in Canadian Magazine.

The Oregon and California Land Grant

H. E. Haefner, Siskiyou

The Oregon and California Land Grant to the Southern Pacific Railroad included every alternate section of vacant government land, beginning with Section 1 of each township, for a distance of 20 miles on each side of the railroad from San Francisco to Portland. By this grant the company became the largest holder of western timberland outside of the Federal Government. Because of its failure to comply with the terms of the grant the bulk of it has reverted to the government and its disposition is in charge of the Department of the Interior. It has been classified and the agricultural land has been thrown open to settlement. The timberland, after it has been cruised and appraised, is being sold to operating lumber companies with a time limit for the removal of the timber.

Many thousands of acres of this grant are inside of the National Forests of western Oregon. Just outside of the Siskiyou Forest in southwestern Oregon, a section of railroad land was sold to a small mill man in [illegible]. The stand was 85 per cent fir and 15 per cent pine. The fir is rough and [illegible] merchantable in competition with northern fir. It has a stumpage value of about $.60 per M. The pine is worth about $2.75 per M and it is marketed at a profit. The mill man is cutting every pine tree that will make a saw log and he is leaving most of the fir. He logs in a destructive manner without regard for the future stand. In the Coos Bay region several areas of railroad land have been logged recently. The cut has been clean, no seed trees were left, and the slash may or may not be burned unless ordered by the State Forester.

One branch of the Government, responsible for the administration of the National Forests, is trying to supervise the cutting of government timber so that the utilization of merchantable material will be greater and in order that the growing of a second crop of timber will be assured. The other branch of the Government, charged with the supervision of this relatively large body of timber, assumes no obligation whatever for the methods of logging that are employed, for the utilization of merchantable material, or for the condition of the cut-over land after logging in the sale of timberland to private parties.

Thousands of acres of timberland on this grant have already been culled and then swept by fire until their productive capacity is low and the forest growth is made up of inferior species. These cut-over lands will eventually come under Federal control. The logging of these lands has hardly started at this time. It would seem advisable, unless these lands are soon placed under the jurisdiction of the Forest Service, that the Service in cooperation with the Department of the Interior supervise the cutting of timber on them and thereby prevent needless waste and the destruction of forest resources that will be badly needed in the future.

Land Classification and Forest Sites

By W. D. Sterrett, Washington, D. C.

As the primary requirement for the growing of forest is land, forestry may be regarded as largely a branch of land economics, which deals with the classification of land with reference to its most economic use. For this reason it would seem that the problem of classification and mapping of all lands as a basis for recommending what areas are economically best fitted for growing of forests deserves more attention. This involves also the consideration of their productive capacity in terms of different kinds of forest growth. The Capper Report recommends and the Snell Bill provides for a survey and classification of forest resources, including location of areas chiefly valuable for timber-growing and the determination of their productive capacity. This might well be construed or extended to include: (1) classification of all land into land types, such as would indicate in a general way its relative suitability and potential possibilities for agricultural and other crops; and (2) correlation of land type with forest site--the latter indicating its productive capacity for growing different kinds of timbers. The extension of land classification to all lands seems necessary in order to intelligently recommend or demark areas for timber growing. The kinds of land types to be recommended for this purpose will vary with geographical location and with local economic factors as well as with their potential possibilities for agricultural crops. There are in the aggregate large areas of possible agricultural land in the United States for which, because of local or general economic conditions, timber growing forms the best use for the next generation or longer, which should be definitely classified and recommended to be used for this purpose. This would even include some areas of potentially choice agricultural land to be held in forest for such purposes as protection of watersheds, equalization of streamflow, windbreaks and shelter belts, military strategy, forest parks, etc. Wide discussion of the subject of land classification, including correlation of physical land types and forest sites, seems important as preparatory to carrying out the above referred to recommendations in the Capper Report and provisions in the Snell Bill for the purpose of recommending areas, under both public and private ownership, for continuous forest.

An Eye for - - - - $50

The payment of $50 has just been authorized by the Secretary to Bert Decker, of Kooskia, Idaho, as compensation representing the depreciation in value to a horse because of the loss of an eye while the animal was under contract of hire to the Forest Service. The decrease in value was determined after an appraisal by disinterested parties. It appears that the animal was under contract of hire for packing supplies during the fire season and that while so used the animal had its left eye put out. The owner made claim because he felt that a one-eyed horse was not as valuable as a two-eyed horse and the sum paid is estimated to represent the depreciation in value.--P.K.

Pioneer Forest Times

By C. H. Shinn, D-5

Only a few persons now in the Service have had actual outdoor experience of conditions as they were under the Land Office in the first two or three years of the century. As a rule, officers did the best they could, but the whole thing was a venture into utterly untried fields.

The first Forest Guard I ever met (it was on a ridge southwest of Tahoe) said to me that he had never seen his superior officer but once, for five months, and then had to ride thirty miles outside the Forest to the hotel where this officer stayed, not leaving it summer or winter.

The next Forest Guard I met, in 1902, was one of two "summer guards" who had charge of about three million acres. He was told by me that there was enough work in sight "for twenty all-the-year hustlers."

The young fellow was fairly paralyzed for a minute; then he broke out with: "Why, Mr. Shinn, that's plumb crazy! There's nothin' to do; a man sleeps half the time, gets bored to death, sometimes watches a fire for a few days." "Don't you fight fires?" "Too hard work, an haint got no tools. O yes, I gets letters tellin' me to put out fires, but they just makes more feed up here."

Of course this was an extreme case. Pioneer Forest Guards, such as Bigelow, Mainwaring, Ellis, Westfall, Crane in what is now Stanislaus, Sierra and Sequoia Forests, had bought or made their own fire tools, at their own expense, and had conquered a whole lot of fires long before I met this young take-it-easy chap. But it was mighty uphill work, even for them, because the whole spirit of and devotion to the cause of Forestry had still to be created among the men and women of the Forest, and in the whole community.

One of the fine pioneers of the Service, "Doc" Hogue, (Supervisor Hogue of the Inyo, now retired) asked in 1902: "Just what is this whole thing for? What's the reason behind it? Why does Uncle Sam take their timber away from the people of Madera County? People ask me. What can I tell them?"

You see, fellows, the pioneer foresters had first of all to orient themselves, face the morning, welcome the rising sun and fully accept the principle of conservation of natural resources. Then they had to create a common basis of understanding with the whole community--with no end of little settlements, and all sorts of industries. Of course it took time, self-discipline, hard work, tireless study, and after twenty years the broadening ideals of our profession still urge us to yet more strenuous toils.

FOREST PRODUCTS LABORATORY

Resin Content of Douglas Fir: Numerous attempts have been made to obtain rosin and turpentine from Douglas fir trees, both by the European practice of tapping and by the method of chipping used in the South on longleaf pine. Neither method appears promising, for, as Laboratory analysis has shown, the resin is not there in sufficient quantity to make the operation worth while at the present price of naval stores.

The oleoresin of Douglas fir, which is the crude resin mixed with certain volatile oils, has been gathered for several years and sold without refining under the name of Oregon balsam. It brings about $1.50 a gallon. The oleoresin collects in pockets formed by windshakes in the standing tree. There is very little evidence that a given tree contains such a pocket, but, if one is found by boring, the oleoresin readily flows out, from one to three gallons being obtained from a single pocket. There is a considerable element of chance in this method, and the collector might go for a whole day without making a single productive tap. Since the oleoresin collects in pockets formed by accident, it is reasonable to suppose that it would collect in pockets formed by design. If the holes made in boring after pockets were plugged, the oleoresin might collect there and be drained off when a sufficient amount had accumulated. The labor involved in making an unsuccessful tap would not then be entirely wasted.

Oregon balsam is in increasing demand, particularly by the varnish trade. It is also being used to some extent as a substitute for Venice turpentine, a purpose for which it was suggested, under the name of Douglas fir turpentine. by the Laboratory some years ago. As such it is used particularly in the ceramics industry and in the manufacture of porous plasters. A pamphlet on the collection and uses of Douglas fir turpentine may be obtained from the Laboratory on request.

Has Your Table Top a Sunken Joint? In sighting along the top of a desk or table you may often notice long, troughlike depressions, which are very conspicuous when viewed at certain angles. Furniture manufacturers have asked the Laboratory for an explanation of the cause of these defects and how they may be avoided. The answer is that the furniture makers are in too much of a hurry to finish their product. The defects occur only over glued joints in the top. The wood nearest the joints absorbs water from the glue and swells. If the top is planed at once, more wood will be scraped off at the joints than at other places, and, when the top dries out, the moist wood at the joints shrinks more, causing permanent depressions. To avoid sunken joints, manufacturers must let the tops season for a longer time between gluing and planing, until the water added by the glue evaporates or distributes itself through the wood.

Lumber Used In the Automobile Industry: The increasing popularity of closed cars means a much larger consumption of wood in the automobile industry. A closed car takes from two to three times as much lumber as an open car, and a better grade of lumber is required to insure rigidity and freedom from warping in the closed body. An engineer from the Laboratory recently visited a number of the large motor car factories to find out what kinds of wood they were using for various parts. He found that maple leads in the construction of the main framework, elm is next and ash is third. Although ash is probably preferable because it holds its shape best, on account of its increased cost it is now used only on high-priced cars. The use of birch is increasing; it seems to be as good as maple in mechanical properties and better in seasoning properties. Hickory remains the standard wood for spokes and rims. An appreciable quantity of red gum is used for floor boards, also for frames and steering wheels. Among the other species used are wormy oak for floor and running boards, second-growth oak for top bows, sycamore for posts and pillars, yellow pine and Douglas fir for floor boards, and basswood, cottonwood, and yellow poplar for other minor parts.

Each open car requires on the average 150 board feet of lumber, and each sedan about twice as much. The waste runs from 30 to 40 per cent, including drying losses. In automobile work firsts and seconds are used almost exclusively. The total consumption of wood in the industry is estimated at 385 million board feet annually. Almost 60 million feet are required to make the crates in which motor cars are shipped abroad.

Ranger Bill Says:

I've got a Botanical Garden in my own front yard--only Nature did a bum job.

Did you ever figger good health and happiness amongst the assets of a Ranger's job?

Ranger B. Laze says his workshop's so full of last year's signs there ain't room to do nothin'.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Recreation Plan for Superior Forest: Recreation Engineer A. H. Carhart attended a meeting of the Northwest Development Committee of Civic and Commercial Associations of Minneapolis on April 11 and will meet with representatives of Commercial Associations, Railroad Companies and the Ten Thousand Lakes of Minnesota Association on May 12 at Minneapolis and Saint Paul. Mr. Carhart is going with the idea of starting a comprehensive recreational plan for the Superior National Forest similar to that now in force on the San Isabel Forest, Colorado. The plan is to lay down a big basic foundation on which all future recreation developments can expand, and to get this plan started before anybody begins to put in little camp sites, summer homes, etc.

Quick Action in Fire Trespass: The advantage of quick action in case of fire trespass was emphasized recently on the Michigan during Fire Inspector McLaren's visit to that Forest. On April 6 and 7 the D. & M. Railway set fires within the Forest, one of which caused cost and damages amounting to $36.12 and the other $177.59. By April 12, the necessary evidence had been secured and submitted to the company with a demand for payment which was promptly met by a deposit of the required sum in full settlement. The Supervisor himself settled the smaller case, being within his authority, and the large one was settled on the ground by McLaren as the personal representative of the District Forester.

Livestock Market Depressed: The Denver livestock market, during the latter part of April, reached the lowest spot in ten years. Good white faced, native yearlings could have been bought on the market on April 28 at $20.00 per head, a drop of about $15.00 per head in what they were worth a few weeks ago. The outlook for the livestock men is certainly more discouraging than ever. No one seems to be able to calculate just what the future holds.

Fruit Growers Suffer Loss: The outlook for the fruit growers of Colorado is extremely discouraging on account of freezing weather during April. Practically all the early crop is said to be destroyed.

Suggestion from O. F.: Is there any advantage in having the Weekly Bulletin printed on legal size paper? It would be so much more convenient to file if if were on letter-size paper, besides take up less room.

(Mechanical difficulties and the amount of copy carried by the Bulletin make the use of letter-sized paper impracticable.--Ed.)

DISTRICT 4 - INTERMOUNTAIN DISTRICT

A Problem in Supply and Demand: A recent study of the supply and demand for lumber and allied products of Utah has produced the following results: Acreage of timber and woodland, approximately seven million; estimated stand of timber 4" D.B.H. and up, ten billion feet B.M.; manufactured in the State locally each year, twenty-six million feet B. M.; consumption of lumber and other products, two hundred million feet B. M. or eight times as much as produced locally. The ten billion feet, if managed on an average rotation of one hundred fifty years, would give an annual cut of sixty-seven million, or approximately 33 per cent of the total annual consumption. The balance (87 per cent) of the present total annual consumption over present production is now being supplied largely from the Pacific Coast. Utah can increase its local cut two and one-half times or to approximately sixty-seven million, by opening up inaccessible timber. Local demand will no doubt increase to a considerable extent. If, according to economists, the Coast supply is materially reduced or completely cut off in thirty to fifty years, Utah will have to look elsewhere for the major portion of her supply. Who is to solve this problem?

Tree Planting Articles Bear Fruit: As a result of the articles prepared for the two local papers and published prior to Arbor Day the local grammar school and many citizens of Elko observed the day by planting trees. Not long after the article appeared in the paper a Salt Lake nurseryman came bolting into the office with a million dollar smile, saying that the articles that we had gotten out had prompted his trip to Elko and that he had placed a large amount of nursery stock with the Elko people for Arbor Day planting.--Humboldt Hummer.

An Experience in High Finance: A letter has just been received from the Supervisor of the Toiyabe National Forest, stating that, as a result of authority from the District office, he procured a warrant from the local Justice of the Peace, no United States Commissioner being available, for the arrest of George W. O'Neill, who committed a grazing trespass in July, 1920.

Usual demands had been made upon O'Neill to settle the damages involved, but he promptly proceeded to make his whereabouts unknown, and letters addressed to him were returned. Just recently, the Supervisor learned that O'Neill was in the vicinity of the Lodi Valley. As stated, authority was given for the arrest.

When Supervisor McGowan and Ranger Schoeller served the warrant upon O'Neill and informed him that he was entitled to a free transportation to Austin for the purpose of making his defense before a Justice of the Peace, O'Neill concluded that he would rather pay the damages which were in the neighborhood of $75.

In order to do this, he was obliged to hypothecate his jitney. This he was reluctant to do, and strange enough, the rancher, who was finally persuaded to advance the necessary money upon security of the machine, was also reluctant to exchange his money for a rundown "Lizzie." The transaction, however, was completed, and the money has been deposited with the District Fiscal Agent.

Thus endeth a case, which, for the amount involved, has had a maximum of attention from the local officers, the District Office, the Forester, and the Department of Justice.

Motion Pictures Reach Many: The four reels of official motion pictures which have just completed a circuit in this District were shown to a total of 11,500 people in thirteen different towns.

Summer Camp Permittees Meet: A meeting of the summer camp permittees of Logan Canyon was held in the Chamber of Commerce rooms at Logan on April 15. It was agreed to form an association under Regulation A-11, and an advisory board was elected to draw up a constitution and by-laws.--Cache Register.

Carrier Pigeons Secured for Idaho: Forest Ranger Walter A. Estep of the Idaho Forest has secured four pairs of carrier pigeons from the Deschutes Forest in Oregon, and plans to carry on an experiment in the use of the pigeons for messengers. The pigeons will be kept at the Paddy Flat Ranger Station and will be tried out on the surrounding district, and possibly, the Thunder Mountain area.

Utah Supervisors to Meet: A meeting of Utah Supervisors has been called, and will be held at Salt Lake City, Saturday, May 7, for the purpose of considering the matter of taking up the work in connection with range appraisals.

DISTRICT 5 - CALIFORNIA DISTRICT

Grazing Fees Coming In Slowly: Receipts indicate that about 80 per cent of our grazing permittees are taking advantage of the optional postponement in payment of fees. Last year the receipts for the month of March were $68,217.85 as against $12,340.60 for the same period this year.

Oakland School Exhibit: Mr. Fair has set up our complete exhibit in the Oakland Municipal Auditorium, and it will be shown to the public-school children of Oakland from April 4 to 24 inclusive. Arrangements have been made to handle at least 700 children a day.

The Air Service, as usual, is cooperating in this exhibit.

Ranger Improves His Surroundings: "I have recently set out twelve pepper trees for both shade and ornament at the San Jacinto R. S. Twelve Monterey cypress trees have arrived and will also be set out. These I have furnished at my own expense. As a matter of fact, I have seldom lived in any house or on any place where I have not done something in the way of permanently improving the place at my own expense. I have done it as a slight token of my appreciation of the conveniences free of charge, and because I also believe that everyone should leave things a little better than they find them."

Why Not a "Way Book?" Do you remember when you first came to a strange District and were turned loose? Perhaps the Supervisor came out with you when you first arrived and pointed out a lot of places that you were to go to and told you how to get there and was then called away before you began to get acquainted with the country.

Do you remember how your heart jumped every time the 'phone rang for fear it was "Bill" up on the lookout reporting a fire and you wouldn't know how to get there after he told you?

Do you remember looking through the files and seeing under trespass how "Jones" let a fire go and it burned 2,500 acres on Howland Flat, and your predecessor broke all records by getting there with a crew in three hours? And then you wonder where in tarnation that is, and if another fire were to break out there to-day how long would it take you to get there with a crew? Sure! We all feel that way at times when we are in a strange country. If, just to help things along, a fire broke out before we get settled, we're up against it for awhile.

This also applies to the patrolman. He reports to the District Ranger, who takes him to his station and gets him settled. If he is a stranger in the country, he is told to "learn" it, with the aid of a map. Suppose, after two or three days, a fire breaks out. After locating it on the map, he starts out by the nearest known trail and eventually gets there after riding fourteen miles in an awful hurry. After it is all over, and the smoke is cleared away, he finds that there is an old road by which he could have saved half that distance, had he known it was in existence.

Again, let us suppose that you are new on a district and a car rolls up in front of the station and its occupant comes in and wants a fire permit and a lot of information about trails and the like that you don't ~~even know~~ exist. "The trail to Hidden Lake, sure!", and you gracefully step over to the map. The trail in question is only a mark on the ground and is used more by cattle than anything else. Accordingly, it was left off the map. Discovering this, you become warm around the collar and with a faint hope call "Bill" on the line. He's heard of it, but doesn't know where it starts. Smith's an old-timer,--he might know. So, friend camper is referred to Smith with due apologies that you are a stranger in the country.

It may be all right to go about helping tourists, but the sign in front of the station states that the camper may get his information there. It is, therefore, a loss of time to both camper and ranger if the camper can not get his information directly from the Ranger. And, furthermore, we do not want to advertise that we are "bears" on information about the surrounding country if we can't give it. It helps the public to get a wrong impression of the Forest Service.

Now, let us come to the point. Wouldn't it be a help to have a "Way-book" at each station? This book to be made for and left at its respective station. Then, when the Ranger or patrolman finds a hidden or previously unknown road or trail, let him record same in the "Way-book." It would be well to have it indexed, then on the designated page the necessary information about the trail or old road, written plainly, explaining facilities for horse, pack-horse, etc.

All notes should be dated in order to enable the user to make allowances for what may have happened in the way of washouts, overgrowths, etc. On the opposite page, a rough map of the surrounding country might be made. A map should be pasted in the front of the book and marked out accordingly.

A great deal more might be said on the subject if time and space were available. However, I think the "Way-book" would save a great deal of unnecessary worry and loss of time.--H.C.Gerrish, Cleveland.

DISTRICT 6 - NORTH PACIFIC DISTRICT

First Signs of Spring: Fishermen asking how the roads are to the lakes.
Forest officer fixing up the old "Jitney."
Supervisor inquiring how much money left in ________?

The Wealthy Whitman: Thirty seven million out at 2 per cent simple interest. Not so bad, eh? That means 740,000 per year; 7.5 millions every ten years, or 44,000,000 in pure interest at the end of 60 years when we will claim all of the interest and most of the capital.

It's board feet of timber we are talking about, not dollars. But maybe they will be the same thing by that time.

In the middle John Day Block on the Whitman there has been cut over 170,000,000 feet of yellow pine during the last ten years. This forms about 82 per cent of the original stand of yellow pine from which it was taken. The remaining 18 per cent, or 37,000,000 feet, was reserved on the principle of "Invest Part of Your Income." The result speaks for itself.

Side by side with the Forest Service the private lumberman has worked at a similar job,--with a far different objective. We work for development and the future, he works for exploitation and the present. We get smaller returns, and often; he gets larger returns, ONCE, and leaves the country. Perhaps he or his children will have a money equivalent for our forty-four millions of interest, but where is it? Certainly not invested in the Middle John Day country!

We will have $300,000 in interest coming out of that Block every ten years. This will represent a finished product worth around three million dollars. Practically two-thirds of the cost of the finished product is labor; which means that between Bates and Baker the lumberman's despised "Seed Tree Policy of the Forest Service" will pay quite some wages.

All of which brings up the object in the creation of the Forest Service, namely:--Conservation through Use.--H. T. Gisborne.

His Father Was A Ranger: A human interest incident of the recent Ranger Meeting at Bend, Oregon, occurred one evening in the lobby of the Pilot Butte Inn. A number of the Rangers were seated in the lobby, talking over grazing cases, fire fighting, and plans of work, when a little, fair-haired newsboy came in selling the evening paper. Several Rangers brought copies, when Ranger LaSater of the Fremont asked the boy if his name were not Fremont McComb and if his father had not been a Forest Ranger. The boy said "Yes, sir," whereupon all the Rangers decided that they needed a copy of that particular issue of the "Bend Bulletin," and the boy was told not to bother to make change.

The little chap's name was Fremont McComb, having been named by his father, Scott McComb, for the Fremont Forest. Scott McComb was for many years a Ranger on the Fremont Forest where the memory of his fine character and efficient service is still held in high esteem by all who knew him. He was stationed on the Paisley Ranger District and died in 1917 while in the Service.

DISTRICT 7 - EASTERN DISTRICT

The Reconnaissance Party which has been engaged in timber survey on the Arkansas Forest finished the work on six working circles the last of April and departed for the Cherokee National Forest in Tennessee and Georgia, where they will undertake the survey of two or three important circles.

District Seven Refuses "To Be Made A Monkey Of": After about 450 applications for buffalo, the District feels it has reached its limit with the following request:

Dear Sir:

Please send me the cost of shipping a Buffalo to Gilbert, Arizona. I would desire one of the smallest size and age available. I found this in the Weekly News Letter of March 2, 1921. I would also like to know if there is any possible chance to get a young Monkey of very small size and very young so I could train him. Would pay for "monkey." Please let me know of any place you think I could get a "Monkey."

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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DELEGATION OF AUTHORITY TO THE FIELD

(Letter from Supervisor Coffman of the California to his Rangers)

In the conduct of government or of any large organization there are two schools of thought: one would have the control highly centralized; the other would delegate to all its officers all the way down the line as much authority as they are capable of handling efficiently.

Under a highly centralized scheme of control, you and I would be mere agents to handle business to be passed on up and acted upon by others above us, with very little incentive for the development of individuality, originality or initiative. Fortunately, the Forester and our District Forester are willing and desirous to delegate to the field officers all the authority within their power to bestow, provided the field officers show the necessary grasp of their work and ability and willingness to administer that authority to the best advantage. Because of this policy, you and I are administrative officers instead of mere agents.

How have we individually and collectively as a Forest organization appreciated this and taken advantage of this willingness to delegate authority?

There are Supervisors and Forest Clerks who want the District office to do for them work which they could do themselves: there are some who pass on to the District office to straighten out the errors and mistakes which they could have corrected themselves. That is one reason why we need so many clerks and so much overhead in the District office--to catch our errors and correct our mistakes, both in the preparation of data and in the interpretation of regulations and policies. On the other hand, there are Supervisors and Clerks who take pride in seeing that everything that bears their signature is accurate in statement and correct as to regulations and policies, and there are a few--all too few--who resent having the District office do for them what they are capable of doing for themselves. The men that seek the responsibilities that go with authority, and show the ability to handle them efficiently, are the men that get the increased authority--and incidentally the increased salary.

Similar relations exist between the District Rangers and the Supervisor's office. Do you see to it that your diaries, Forms 26, vouchers and reports are carefully and accurately prepared and submitted promptly, or do you have to receive a special request for papers that you should not have overlooked if you were following your promise cards carefully? Do you take pride in seeing that your improvements are kept up carefully, or do you wait for some one from the Supervisor's office or from the District office to call your attention to a telephone box or line needing repair, a broken down fence, an unkempt station, fire tools needing sharpening? Do you keep in intimate touch with your grazing permittees and try to adjust all differences as soon as they appear or do you let them develop into a local feud before action is taken or before you notify the Supervisor, and then perhaps the District office and even the Washington office is drawn into the settlement of a dispute that leaves

Delegation of Authority to the Field (Cont.)

hard feelings whichever way the adjustment is made. If you have taken part in one timber sale appraisal, will you, when a new sale comes along, call for a special man to work it up or try to show that you are qualified as a timber-sale man?

You will reply just as I would be likely to tell the District Forester, that you would attend to all of these points if you had sufficient time and assistance. Of course there is a limit to the amount of work that any man can do, but within the limitations of our appropriation the money for the employment of assistance will go where the work most needs it. The point is that the more work in the Supervisor's office the more Forest overhead, and a part of this work can be eliminated if each one of us will do all the work he can and do it right. And in the same way you and I can help eliminate needless work in the District office, all of which means that the money no longer needed for unnecessary work at central offices goes to the field and provides more Assistant Rangers, more Scalers and more Fire Guards. Furthermore, it enables the men in the District office and Supervisor's office to spend more time in the field where they can be of the greatest assistance to the Service and to you personally.

The District Forester has told me that I have a fine force of men on the California and wants to know whether I delegate sufficient authority to you. I have told him that the sky is the limit. Is that the truth? Perhaps I have given you the authority but have failed to show you how fully you could use it.

I have gotten a different slant at this question at our Supervisor's Meeting and I want to pass it along to you. I for one want to demonstrate my eagerness to assume greater responsibilities and get away with them, and I am sure each man on the Forest feels the same way. If we all chew together on this I am sure we will be able to swallow and digest as large a mouthful as we can collectively bite off.

Let's look around and put a hump on ourselves so that when that long anticipated visit of the District Forester or an Inspector materializes he will find much to commend but nothing to condemn.

Light Burning in South Carolina

By W. D. Sterrett, Washington

During March and April some permanent sample plots were remeasured in loblolly pine small-pole stands on a 75,000-acre tract 30 miles northwest of Charleston, S. C., for which diameter limit working plans were made by the Forest Service in 1903. These plots were established in 1905, and have since been remeasured in 1910 and 1916. At the time the plots were established the company had in its employ a forester and fire guards with apparently an adequate system of fire protection. Fires were successfully kept out of the tract for five years. Then came the most destructive fire the company had ever experienced, resulting from the accumulation of inflammable material and from the fire occurring at the worst time of the year. Some 10 million feet of fine timber was killed outright.

Since the fire the company has discontinued having a forester and has reverted to the system of annual light burning to keep down the accumulation of inflammable material. These burnings are carried out by farmers who pasture their stock on the company's land, on interior and adjacent holdings. The company is not at present logging on this tract. These fires seemingly do little damage to timber 4 inches and over in diameter if carried out at the proper time. A very dense thicket 1" to 4" in diameter, "thick as hair on a dog," was light burned by the Forest Service in November, 1905, on one of the permanent sample plots, without serious damage, while other thickets of similar character, on other permanent sample plots, were largely wiped out by "light burning" fires of the local residents. At the time of my recent visit there were "light burning" fires on a number of different parts of the tract. These fires always do some damage to larger trees, but their chief drawback lies in the destruction of reproduction, making it impossible for adequately stocked young stands to get started.

Road and Trail Construction

By G. H. Lautz, Washington.

During the calendar year 1920 there were constructed 1,264 miles of roads and 1,739 miles of trails in the seven districts of the Forest Service. This represented an expenditure of $5,296,850.00 from special road funds; $63,782 from other government funds and $2,283,341 from cooperators. The work as accomplished by districts was as follows:

Dist	Miles Constructed		Funds Expended					
	Roads	Trails	10%	Sec. 8	F.F.R.C.	Other Govern	Coop.	Total
								$
1	172	268	$73,113	$ 169,544	$ 703,859	$11,405	$ 185,622	1,143,543
2	157	127	73,516	169,537	637,775	242	290,844	1,171,914
3	163	351	69,979	100,769	499,078	144	262,407	932,377
4	426	448	64,120	139,698	540,466	8,024	408,411	1,160,719
5	41	205	35,037	217,331	456,870	13,797	168,283	891,318
6	420	254	61,855	420,679	635,589	26,762	922,085	2,066,970
7	44	86	9,988	41,541	176,508	3,408	45,688	277,133
Total	1,423	1,739	387,608	1,259,099	3,650,145	63,782	2,283,340	7,643,974

The construction as accomplished by districts for all years to Jan. 1, 1921, was as follows:

Dist	Miles Constructed		Funds Expended					
	Roads	Trails	10%	Sec. 8	F.F.R.C.	Other Govern	Coop.	Total
1	636	380	435,513	443,745	1,025,877	45,922	616,520	2,867,577
2	434	369	328,080	446,443	949,335	62,490	483,703	2,270,051
3	350	548	317,060	237,430	633,303	4,610	500,842	1,693,245
4	1,410	944	410,431	361,917	864,199	114,751	721,531	2,472,829
5	305	391	269,910	590,835	567,568	105,476	425,854	1,959,643
6	1,049	626	349,011	1,008,286	929,922	135,859	1,565,323	3,988,401
7	140	389	51,477	133,585	199,445	19,646	112,076	516,229
Total	4,324	3,647	2,161,482	3,222,241	5,169,649	488,754	4,425,849	15,467,975

Of the above road mileage 1,591 miles were built by the Bureau of Public Roads as major projects at a cost of $10,222,663. This expenditure included $3,542,773 secured from cooperators.

The minor projects represented 2,734 miles of roads and 3,647 miles of trails, costing $3,744,913, of which $79,471 was cooperative money.

At the end of this year it will be necessary to provide approximately $110,000,000 to construct the 23,000 miles of roads and 20,000 miles of trails as required for the completion of the present Proposed Road System planned for the next 10 years.

Ranger Bill Says:

When you git old and have to quit:--'tain't only how hard you worked, but how hard you saved that's goin' to count.

I'm plantin' a garden fer my wife to take care of this summer.

New tecknical men are a great help when you have to blame someone for poor work, says the For. Asst.

WASHINGTON NOTES

The Big Arena in which will be staged the world's heavyweight boxing championship between Georges Carpentier and Jack Dempsey on July 2 in Jersey City will require 1,327,931 board feet of lumber. The fences and stand will be built of pine and the seats will be fir or spruce. Maybe some of it grew on a National Forest. Here is a $90,000 help for the lumber industry depression and the carpenters.

Assistant Forester Clapp is off on a trip through the southern pineries in connection with investigative work relative to the establishment of Forest Experiment Stations.

Transfer Binders for loose leaf account records will be furnished Supervisors on requisition to the Supply Depot, states Property Assistant J. G. Falck.

"The Life of a Forest Ranger" was the title of an illustrated lecture delivered at the Washington Arts Club by Assistant Forester W. C. Barnes on May 4.

"Joe" Santucci, our mimeograph mechanician, to whom officers are indebted for their weekly copy of the Service Bulletin, is off on a well-earned vacation--hence the double date issue.--Ed.

FOREST PRODUCTS LABORATORY

The Sawdust-Fed Cows at the Wisconsin College of Agriculture are doing as well on a one-third sawdust ration as they did when their food was only one-fourth wood meal. That is to say, they are keeping up their weight and milk production and show no ill effects from the diet. Attracted by these results, the U. S. Bureau of Animal Industry is considering the proposal of the Laboratory to start cooperative feeding trials on a large number of cattle at its various Experimental Stations. The hydrolyzed-wood food for these tests will be made at the Laboratory.

So far all the stock food has been made from white pine sawdust. Other softwoods, particularly the western species, will be tried out in the future.

Paper Has Grain the same as wood, and the Laboratory has found that the strength of a box made of paper or fiber board is affected by the direction in which the grain runs in the sides, top, and bottom. Fiber boxes are scored at the corners to make them fold without breaking. If the fibers in the paper run so that they lap around the corners, the box is stronger than if the fibers run parallel to the folds. No attention has been paid to this fact heretofore in the manufacture of paper boxes.

Douglas Fir For Barrels: Barrels made of Douglas fir stand more internal pressure than oak barrels, and when properly loaded on cars should be able to stand the shocks of ordinary transportation. Douglas fir barrels would probably be more likely than oak barrels to spring leaks if stored in piles on their sides or dropped out of cars. Tests just completed at the Laboratory show that in resistance to rough handling Douglas fir barrels are approximately three-fourths as strong as oak barrels.

DISTRICT 1 - NORTHERN DISTRICT

How An Ex-Service Man Feels About It: Awhile ago I received the following let from an ex-Forest Service man. His income is twice what his salary was, and his financial future is bright and sure, but he has asked for reinstatement. There is food for thought in what he says.--F.M.-D-1.

"I am not getting happiness out of my work and don't know that I ever will to the extent I did in the Forest Service, but I am, as always, doing my best, but I have the idea of everlastingly giving up everything else for monetary profit.

District 1 (Cont.)

"One of the common hallucanations to men in the Forest Service, which I also had, is that they are handicapped and tied so that they cannot say or do just as they would like to at all times; this is a fallacy; whatever walk of life, whatever business we may be engaged in, if we are square shooters and have the proper regard for others, we can not always be independent in ou actions; no man can stand alone. Men in the Forest Service are as untrammelled in their actions as any square man need be.

"I wish it were possible for me to impress on every man of the bunch what a great opportunity he has for doing things that count; things that count measurably for humanity and immeasurably for himself. I wish they kn as well as I do that the greatest contentment in life comes from the knowled that one is doing his best to foster and aid in a big worth-while work and is really accomplishing something through his efforts."

The Kaniksu National Forest is proceeding with the brush disposal work under the cooperative work fund at a very satisfactory rate. Some sixty odd men are employed scattered in crews of 6 to 12 men at the various camps. These men will be carried through the summer on this work and will be available as distinctly valuable fire fighting crews. At the present time the crews are burning as they pile and the results are very satisfactory indeed. There is no question but that there is material saving in cost, while the slash burns up cleanly and the danger of running between piles is reduced to the minimum.

The Manual Review Course for the District closed for the year with a 3 per cent delinquency from the Forests and 8 per cent for the District office. On the Forests, seven scalers were excused from three out of nine of the examinations, and stenographers were not required to take the course. Two or three were excused for sickness, but every other member of the Forest organizations was asked to take the course. Out of 2,178 papers due, 2,103 were received. If any District has a better record, here is a chance to deflate our abnormal chest expansion.

Times Change: Even the longest lanes finally turn. A year ago Forest Supervisors in western Montana and northern Idaho were begging mediocre men to go out in the woods at $5.00 per day. To-day high class woodsmen are begging Forest Supervisors for jobs at $3.50 per day. This, of course, is not the work of the Forest Service, but the result of economic conditions.

Fair Grounds For Chemical Plant: A special meeting of the County Commissioners was held at Eureka, Montana, recently to consider the matter of trading the county fair grounds for a tract of land belonging to Joe Peltier, north of Eureka. The present fair grounds, owned by the county, comprise a site that is desired by Baltimore capitalists for the erection of a chemical plant. The newdomers offered to buy the Peltier tract and give it to the county in exchange for the present fair grounds. The commissioners agreed to the proposal, and the exchange will be made as soon as the legal steps necessary can be taken.

According to reports from Eureka, the new company expects to spend $100,000 this year in erecting a factory. The first building erected will be 150 by 150 feet square. The company will employ about 75 men at first. It plans to use tamarack butts and logs for the manufacture of certain chemicals, among the products being certain chemicals used in making soft drinks and baking powder.

The process will consist of grinding the logs to a pulp, and then extracting the desired chemicals from the pulp. It is planned at a later date to use this pulp in manufacturing paper. The company will use about 275 cords of wood per day, and has chosen ~~xxxxby~~ Eureka for its site because of the large amount of tamarack available nearby.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

The General District Meeting on May 4 was addressed by Mr. Douglas of the Office of Grazing on the subject of game in the National Forests. The talk was illustrated by slides and two excellent game films were shown. This is the last General Meeting of the winter season.

Fire Situation Serious in Southern Colorado: In spite of the recent heavy snowfall in Colorado, there was but little precipitation in the southwestern part of the State, and as a result, dangerous conditions have developed in the yellow pine country of the Durango-San Juan. On May 5, the Supervisor reported an 80-acre fire and was authorized to put on an emergency patrolman on the Pine River District.

The Colorado Game and Fish Protective Association is planning an extensive State-wide membership campaign. It is soon to get out a bulletin on the accomplishments of the recent legislature and will use that as one way of carrying the idea to the public and to its membership. It is proposed to offer prizes, like revolvers, fishing rods, etc.,--anything that would appeal to sportsmen,--and different prizes to represent different numbers of members sent in.

Supervisor Traps Beaver: Supervisor Agee of the Cochetopa National Forest has received authority from State Game Commissioner Parvin to trap beaver and transplant them to waters not now stocked. Mr. Agee captured and transplanted three beaver late last fall, and observations this spring show that a colony house has been established, and the transplant was successful.

Predatory Animal Campaign: It is planned to ask the Supervisors, in connection with their Annual Game Report, to map in a special way the habitats of wolves and lions, with estimates of numbers, with a view to getting an idea of the extent of the problem for cooperation with the Biological Survey in an extermination program to be inaugurated this coming year. The Survey has also asked our cooperation in concentrating on two Forests where losses have occurred among livestock on a predatory animal campaign.

State Land Board To Follow Forestry Methods: Recent changes in the personnel of the Colorado State Land Board raised anew the question as to what attitude the Board would take toward forestry on the State lands and toward a national program of forestry.

In a recent interview with the Board by members of the District Forester's Office, the Register, former Lieutenant Governor Stephan, expressed himself very freely and very satisfactorily. It seems that he is thoroughly "sold" on the necessity of forest and watershed protection, and will use his influence in favor of better silviculture on State lands, better State forest laws, and better cooperation with the Forest Service. This attitude will do much for Colorado forestry.

Recently the Land Board advertised a sale of timber on a School Section, stating specifically that no disposal of brush would be required. When the matter was called to his attention, Mr. Stephan stated that the provision against brush disposal was a mistake and would be rectified; that the Board intended to handle its sales under approved methods and with full precautions against fire.

Community Week was put on at Boulder, Colorado, on May 2-5. In the Temple Building, 28 booths were set up in which were placed exhibits of different enterprises of the community. The largest and most attractive exhibit was that installed by the Forest Service. This contained a painted relief map 16½ x 7½ feet of the Glacier Region of the Colorado National Forest. A camp scene surrounded by trees made up the main portion of the exhibit. There were colored photographs and a cross section of a 300-year old log which attracted great attention. H. N. Wheeler of Public Relations gave eight lectures, illustrated with slides, at the schools and in several of the churches, before 1,900 people. Great interest was aroused during the week, and it appears that the whole locality is awakening to what the Colorado National Forest means to it.

Black Hills Gets Action on Fire Trespassers: To the Black Hills goes the honor of the first decisive action in carrying out the recently emphasized fire prevention campaign. The Supervisor states that on May 1 a fire was reported to him, and ten minutes later he had a crew of men on the way to it. They found two boys, 15 and 17 years of age, fighting the fire, which had started from their camp while they were away fishing. Monday morning the Forest Ranger took the boys to Rapid City where they were fined $25 by the Juvenile Judge.

District 2 (Cont.)

The lightness of the fine is attributed to the fact that the boys did not appear to be bad boys; that they had faithfully tried to put out the fire after it had begun to spread; that the older of them had incurred the loss of some of his clothing, $5.00 in money and his railroad ticket which was burned in the fire, and that they were first offenders.

District Office Welfare Committee, which is composed of three members, with H. N. Wheeler as Chairman, has for its duties:

1. To render all reasonable assistance to the families of men in the field during illness or other emergency.
2. To be in a position to refer members of the office to competent physicians, surgeons, nurses, etc.
3. To see that local members of the Service have proper attention during sickness.
4. To be in a position to direct incoming members of the office to desirable living quarters.
5. To help new members of the Service to become connected with social or church organizations, etc., when such help is needed.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Manzano Stations to Bloom: Ranger Lemley has set out thirteen plum trees at the Tajique Station and plans on planting some peach trees also. Ranger Wheeler is putting in a variety of small fruits and flowering plants at the Cedro Station. Ranger Brennan is not only cogitating on a sizeable spud patch, but is having his yard leveled and ploughed for grass and posies. Verily, if this garden fever keeps spreading the Manzano Station will bloom as the rose.

Big Fire in Catalinas: A fire starting on the North slope of the Santa Catalinas on the Coronado last Wednesday and driven by high winds burned unchecked for three days toward the heavy timbered resort region around Mt. Lemmon. A wire from Assistant District Forester Marsh, stated that 175 men were on the fire and that the main points of danger on the area were under control.

Pinon Pine Provides Roof Paint and Motor Fuel: An obscure Arizona Forest was boasting not long ago of some permittee who made charcoal out of branch-wood. We now bring forward Mr. J. C. Starriett, a remarkably successful June 11th farmer on the Zuni District, as our entry in this contest. Desiring some pine tar to paint his roof with, he scooped out a shallow basin on a gentle slope, heaped up a pile of dead pinon wood, covered it, except at the top, with a mat of grass and earth, and lighted a fire at the top, ventilating the fire as it burned downward by making holes through the earth cover. The tar melted beneath the fire and collected in the basin, from which it was drained by a pipe. Mr. Starriett got not only a barrel of pine tar but some excellent charcoal for his forge. He is now trying to contrive some way to distill turpentine from the tar for tractor fuel.

Open Winter Fatal to Seedlings: Reports from the Fort Valley Experiment Station indicate that the big seedling crop of 1919 has suffered severely from the effects of the open winter.

Manzano Doctors Its Waterfall: Nat. Forest Examiner Kissam recently completed the trail up San Lorenzo Canyon, from the end of the road built by Mr. Hughes. The new trail is about one-half mile long and opens up what promises to be a popular picnic ground for Albuquerque. In addition a great deal of work was done in cleaning out rocks and debris to make camp-sites, and even some landscape gardening was indulged in in a way of changing the course of a small stream so that it makes a vertical drop over a cliff into a pool below.

Some One Playing For a Fall: Ranger Brubaker, of the Lincoln, reports another 40-acre fire occurring on the Bonita last Sunday during the violent windstorm of that date. By the time he arrived per diem Guard Bragg with a good turnout of permittees and residents had the fire pretty well under control. This makes the third fire in that vicinity where incendiarism is suspected, but so far we have been unable to scent a definite clue.

Movies on Prescott: Five reels of pictures were received by the Prescott on April 10 and furnished the program for the convalescents at the Public Health Hospital, Whipple Barracks, on the evening of April 12. These pictures were thrown on the screen in the Red Cross Building at the Barracks. From the report of the boys who saw them the five reels were run without a hitch and afforded a most interesting motion picture evening. This publicity is stimulating the desire among ex-service men to become Forest Rangers with the result that the Prescott is getting its share of applications for assignments as Vocational Forest Rangers.

Forest Officers Come and Go, But Permittees Go On Forever: Dep. For. Supervisor McNelty, while looking over some timber work, ran across an old Mexican who has been purchasing his wood from this Forest for many years. Jose Fontes has seen Rangers and Supervisors come to and go from the Prescott, and he is still loyal to the first Ranger who sold him wood,--Leon F. Kneipp, now Assistant Forester in charge of Lands. Fontes believes the regulations are as changeable as is the personnel of the Service. He told of how Ranger Kneipp came along one day and told him to pile the brush in big piles,--then after Ranger Kneipp came Supervisor Frank P. Steward, and "the Supervisor, he said, 'no, Fontes, you must pile the brush in little piles'--so, it was just chan-gie per chan-gie, all the time, all the time."

Speed: A wire from the Forester approving the McFadden Hill road project was received in the District office at 8:30 A. M. April 30. At 10 A. M. District Engineer Long wired the Gila County Clerk at Globe, Arizona, stating the condition upon which the project was approved by the Forester and requested a reply by wire as to whether or not the County Board accepted the conditions. The three members of the County Board live at Globe, Miami and Hayden respectively, consequently the clerk had to reach them by phone. Yet at 10:47 A.M. the clerk wired to the effect that our proposition was accepted. Thus in two hours and seventeen minutes from the receipt of the Forester's wire the whole matter was closed.

Tell It To The Judge: This is becoming a popular sentence on the Coconino in connection with "left over" campfires. Four men recently talked themselves out of $10 each before Judge Kidd at Flagstaff, to say nothing of a few 60-day suspended sentences which were distributed gratis. One, E. Espinosa, also paid $15.75 fire fighting costs. To Rangers Nichols, Lincoln and Brown belong the honors. And by the way, Brown is getting into the footprint and auto tire sleuth class while Nichols and Lincoln specialize on tobacco cans, paper sacks and lunch remains.

Two More Bagged: A wire from the Tonto states that two fires of 10 and 125 acres, respectively, are under control and the two individuals that started them are under arrest. A trial before the J. P. at Pleasant Valley will be held immediately. This is batting right around the 1000 per cent mark. Let's knock the cover off the ball this season!

Fire Slogans: The Tusayan fire plan just received states "Our slogan is 'FFF' meaning Fires, First, and Foremost." Why not a District slogan of "Fines For Fires" or "Fight Fires First," or "Fires Finished Fast."

Sign Shop Costs: The cost figures for the 1920-21 Sign Shop are now available and show an average cost per sign including statutory labor of 92¢, and excluding statutory labor 32¢. These figures are f.o.b. Santa Fe crated, and cover an output of 3,349 signs. The cost figures for last year were 83¢ and 23¢ for 3,845 signs. The increased cost of 9¢ per sign is accounted for by the fact that this year's signs were all coated with spar varnish, were crated very carefully, and a slightly smaller number were requisitioned. D-3 cost figures compare very favorably with any figures available for similar costs in other Districts, and this office has commended Ranger Blodgett who was foreman of the Sign Shop, and the other Santa Fe officers concerned with the Sign Shop, for the excellent showing which they have made.

Allowing our spar-varnished wooden signs a life of five years and metal signs a life of ten years, and allowing 10¢ extra for an additional coat of spar varnish for the wooden sign at some time during its life, the cost per year per sign according to our figures is 13¢ for metal and 20¢ for wooden signs including statutory labor. Excluding statutory labor the comparison is wood 10¢, metal 13¢.

District 3 (Cont.)

Important Classification Decision: The Secretary [illegible] sustained the classification of 160 acres of land on the boundary of the Lincoln National Forest in connection with an appeal by Oscar W. Watkins. This is of particular interest since it involves an erroneous allowance of entry by the Land Office and continued residence under special use permit, but it is held by the Secretary that no equities were established and that the agricultural values were not sufficient to warrant listing.

Raise You D-1: I would like to press the ante a bit in the scaling contest. A recent issue of the Service Bulletin sets forth that one Robert E. Low of the Kaniksu scaled 48,000 logs that totaled eight million feet in five and one-half months. On one of our little sales, Charley Tattrie slipped the rule across the tips of 59,200 pieces with a volume of eight million in five and one-half months."

Exchange Legislation: Senator Jones has introduced a bill, S-917, for consolidation of Forest lands in the Manzano and Santa Fe, authorizing acceptance of title to lands within or near each Forest in exchange for National Forest land, timber, or assignable certificates for timber, within any Forest of the State. Senator Bursum has introduced a similar bill, S-920, covering all the Forests in New Mexico. The use of unreserved public lands for exchange purposes is not included in this legislation, but even so, the success of these bills would be a long step toward working out the problem for New Mexico.

Movies Well Received on Lincoln: Monday afternoon the high school and 7th and 8th grade pupils combined pleasure with education and attended a free matinee at the "Alamento" where the Forest Service presented "In a Sportsman's Paradise," "The Fiery Lance," "Winged Guardians of the Forests," "Little Journeys Through the National Forests," and "Work of a Forest Ranger." The films were clear and well arranged and brought home the necessity of care with fire and the interest which should be taken in the protection of National Forests both as a matter of self preservation and National duty as well as the preservation of the scenic beauties of the country for recreational purposes.

Spark Arrester for Pipes: Devotees to dreams of a 19th Amendment and why Forest Officers should not smoke during the fire season while traveling through timbered areas please take notice: Ranger Woods was recently caught using a small circular tin plate cut to fit the bowl of his pipe with a small hole or two in it which works like a charm from point of draft and makes a very efficient spark arrester from the pipe--even the excessively strong ones. It is recommended that all Forest Officers who indulge, be required to use one of these simple homemade spark arresters or else be transferred to one of the timberless forests where there's nothing to burn. It also works like a charm while riding one of Ford's threats going at 30 miles per.

Posting Signs for the Woolies: The sheep allotment posting crew, consisting of Ranger Fred Miller, Gage and Johnson and Forest Assistant Hamilton, left Williams in the Ford truck on Tuesday. The work was started in the vicinity of Smoot Lake, and the North part of the Williams Division will be completely posted inside of three weeks. Miller sent in a note later saying that they expected to be in the Moritz Lake country by the 22nd. There is always a "proviso" when the Ford truck is the means of transportation.

Clovis Pilgrimage to the Pecos: A delegation from the Chambers of Commerce of Clovis, N. M., and Tulia, Texas, visited the Pecos region on the Santa Fe this week to look over prospective community recreation areas and after going over the ground with Deputy Supervisor De Camp and Ranger Johnson returned to Clovis by way of Albuquerque. The delegation expressed satisfaction with the region for the purposes they had in mind and intimated that development of areas would be underway before the end of this summer.

District 3 (Cont.)

More Cattle Associations on Tonto. A meeting of the cattlemen on the Sierra Ancha and Salt River District was held at the Pinto Creek schoolhouse on March 19th, and the Sierra Ancha and Salt River Cattlemen's Association was organized. On March 29th a similar meeting was held on the Pleasant Valley District and the Pleasant Valley Cattle Growers Association organized. The purpose of these associations is to cooperate with the Forest Service in adjusting matters affecting the grazing of livestock on these districts.

Self-Elected Ranger's Appointment Terminated: John H. Lane, the young man wanted for stealing a badge and forging Ranger Harris" signature to a letter, on the strength of which he got $65 worth of cowboy habiliments and $10 in cash from the Cuba Mercantile Co., was discovered by Ranger Garst in Socorro several days ago. Deputy U. S. Marshall C. H. Kern, upon warrant charging Lane with impersonating a Forest Officer arrested him yesterday and a hearing was held before U. S. Commissioner McDonald of Albuquerque to-day. Mr. Brothers represented the Service. Lane entered a plea of guilty and was bound over to the next term of Federal Court. He is now in the Bernalillo County jail.

Completes Lecture Series: H. N. Cope, Deputy Supervisor of the Gila National Forest, completed at the Normal Friday, a series of talks he started two weeks ago on conservation of National Forests.

DISTPICT 4 - INTERMOUNTAIN DISTRICT

Fire Prevention Essay Contest: As a special feature of Forest Protection Week May 22-28, the District Forester is offering five $10 cash prizes for essays on the subject "The Citizen's Duty in the Protection of the Forests from Fire and How We Can Aid in Preventing Forest Fires." A little group of millionaires in the District Office is putting up the $50, and the contest is open to every boy and girl in Idaho south of Salmon River, under 19 years of age. The essays must not exceed 500 words in length.

Before The Public: An illustrated talk on Forestry was given March 15 to the Lowell Parent-Teacher Association and March 12 to the Saturday Night Club.

A talk was given to the Salt Lake Add Club March 23, which resulted in a committee being appointed to work with the Service in putting before the public the recreation possibilities within the Forest.--Wasatch.

Deputy Turns Inventor: Deputy Supervisor Strong has recently invented a portable telephone which when fully equipped, weighs but one pound fourteen ounces. --Caribou.

Citizens Subscribe Funds for Road: The Supervisor's office is in receipt of a list containing the names of 113 public spirited citizens of Spring City who have agreed to assist in the construction of the Oak Creek Road. $300.00 has been appropriated by the Forest Service for this project, while something like $700.00 has been subscribed by the citizens.--Manti.

Mt. Timpanogos Camp: The Epworth League is to establish a camp from June 27 to July 3 at the base of Mt. Timpanogos, to accommodate 60 to 100 people.

The American Fork Commercial Club on March 18 appointed a committee to post the road from town to the base of Mt. Timpanogos.

The Commercial Club also voted to furnish free transportation for equipment to be used in connection with the establishment of an Art School on the Mountain this summer.--Wasatch.

Horses for Poultry Feed: F. C. Erwin of Ogden, Utah, dropped in April 1 and bought and shipped out 135 horses for poultry feed, paying $5.00 per head at the stockyards at Ledlie for anything that would stand shipping to Petaluma, California. Mr. Erwin was induced to look the horse owners up last November and since that time he has shipped out over 200 head of mustangs for chicken feed, the majority of which have been eating up and destroying range needed for more valuable grades of livestock on the Forest.--Toiyabe.

District 4 (Cont.)

Results of the Sign Shop Work: The sign shop at [illegible] District office this last January and February turned out 1,958 completed signs at a total cost of $6,524.51 -

Average sign - 3.154 square feet.
Average cost per sign - $3.33
Cost per square foot of sign - $1.056
Cost per square foot of sign - Ranger's salary and expenses--$.87
Cost per square foot of sign material and miscellaneous expenses (rent of building, etc.) - $.187
Average quantity of work - 2.38 signs per man per day

DISTRICT 5 - CALIFORNIA DISTRICT

Lamb Experiments: Two problems have recently been suggested for investigations to the University of Nevada Experiment Station.

1. What is the optimum "topping off" period for lambs which are placed on alfalfa stubble or other choice forage in the fall, after they have been brought off the range and separated from the summer band.

2. Studies in shrinkage of lambs while driven from summer range to shipping points; this study to be made under various conilitions encountered in practice.

The Experiment Station Director states that studies have been started and are to be continued covering the first problem and that the importance of the second is such as to warrant favorable consideration and probable action. --Mono.

Home Breeding of Stock: Several of the permittees of the Merced and Chowchilla ranges are in favor of breeding their stock at home in the pastures and not taking any bulls to the ranges. It is believed that they have the right idea and that it will only be a matter of time until the more progressive stockmen are going to adopt this system. These are some of the advantages, and there may be others:--

Opportunity to cull out undesirable breeding stock at a profit by keeping them out of breeding pastures; eliminates the possibility of heifers calving too young; makes it possible to secure the same or better results from one bull under confined pasture breeding conditions than could be secured from two bulls under open range conditions; reduction of chances of loss of valuable bulls by keeping them where they can be given close attention and good care at all seasons of the year; early spring calves with no small calves to bother with in driving to and from the summer ranges; an even-aged bunch of beef, whether sold for veal, baby beef or 2½ years; big calves that may be weaned from the cows when they come from the summer ranges; a better opportunity to exchange bulls between permittees.--Sierra.

Ranger N. W. Coleman of the Klamath has just successfully concluded his first law enforcement case for the 1921 season. He is to be complimented for the way he handled this case, which comprised three incendiary fires all started by the same person. Owing to the amount of evidence secured by Coleman, the culprit waived his rights to a jury trial and accepted the judge's sentence and paid a fine.

The Installment Plan of Fire Settlement has struck some of the brush burners on the Angeles. One pays $5.00 a month for a fire which is costing him $63.00, and another $20.00 a month on a $554.00 fire which he allowed to escape last summer. The latter has only $514.00 yet to pay.

Recreation Boosts Receipts: It is probable that not many Forest Officers have noted the consistent gain in our special use receipts during the past few years. Our records show as follows: 1918, $29,901; 1919, $34,027; 1920, $40,656; to March 31, 1921, $45,340.

Our special use receipts for the first nine months of this fiscal year exceed the receipts for the same period last year by approximately $9,000.

Since a very large portion of this increase is due to the great gain in summer homes and summer resort business, it shows conclusively what can be accomplished by consistently following out the plan of opening up new recreation areas.

This form of Forest work, which might be called recreation development, has resulted in a constant and steady increase in the Forest receipts in this District, and it is confidently believed that by the end of the next five-year period our receipts from this source will amount to not less than $75,000 a year.

Federal Rangers to Police Red River Land: A very important step forward was taken a few days ago when an agreement was signed by Vice-President Willis Walker of The Red River Lumber Company, and the United States Forest Service.

Under this agreement the entire fire protection of approximately 800,000 acres of timberland owned by the company will be undertaken by the Government. The cost will be about $12,000.00 per year.

This will mean that every precaution known to the Forest Service, both for preventing and fighting forest fire, will be employed. Airplanes will patrol the timberlands; every Ranger will be a fire warden, endowed with the powers the Rangers now possess, and woe be to the careless camper who leaves a camp fire burning, or who does not use every precaution to safeguard the forests he is permitted to use.

This agreement will do much to help to preserve the forests, as the lumbermen after many months of discussion have decided to abandon the habit of light burning in the woods as the fires so started are hard to control.--Westwood Sugar Pine.

Coyotes on the Sierra: Roy H. Blood, a former clerk on the Sierra Forest, put in all of last winter trapping on the Forest. He has written Supervisor Benedict a very interesting letter describing his experiences and observations.

"I laid out my first line of traps on the 25th of October. x x x For coyote bait I used squirrel meat ground very fine, to which I added a small amount of tincture of asafetida. x x x I caught seventeen of these so-called coyotes,--though Normart claims they are really gray wolves.

"I spoke to you about finding the carcasses of eight deer that had undoubtedly been killed by coyotes. These kills were always in the deep snow and one could visualize every move that was made. In each case the deer was chased by not more than two animals--sometimes only one-- and caught by another as he circled back over his trail. I have always read that these animals ham-string a deer, but so far as I could tell these deer were pulled down from in ffont by a nose hold, and when you take into consideration the size of these coyotes it does not seem at all impossible. My largest was 62 inches long and would weigh something over 100 pounds, but the average was better than 53 inches from tip to tip, and just that much bone and muscle. In broad daylight I saw one carrying a full grown badger by holding it in his teeth and throwing the weight over his left shoulder. When caught in a trap they will tear manzanita bushes over two inches through into the smallest shreds. The one thing I couldn't understand about these killings was that they were all large deer and mostly bucks. It was some little time after the rutting season and after the bucks had plenty of time to regain strength. The last one I found was about the 24th of February, and as I attempted to lift the head both horns came off in my hand. This for your information regarding the time deer drop their horns at that elevation.

"During my stay in there I saw but one lion track, and though I followed for several miles I could not find where he had either attacked or molested any deer. I am therefore of the opinion that a great many of the kills with which lions are blamed should go to the coyote. J. T. Hogue told me that he had found many deer killed by lions in his time, but he admitted that he had seen no lion sign at these carcasses, and had simply taken it for granted that it was a lion. George Teaford and W. B. Day, both old timers, tell me that they have seen deer killed by single coyotes,--and since these animals of which I speak are not much smaller than the old timber wolf, it does not seem at all impossible. Unless the price of fur goes up to a point where it will pay to trap these coyotes, or until a bounty is placed on them by the county, it will be but a very few years until they do some real damage to the deer. Of course one wonders why they have not reached such numbers before that all deer would be exterminated, but I think that civilization is concentrating the deer and the coyotes into such a small tract of land in the hills that the coyote is gaining advantages every year, and especially during the hard winters. x x x

"Two of the last coyotes caught had large unhealed gashes in their heads and along their sides that could have been made by horns only."

Service Bulletin

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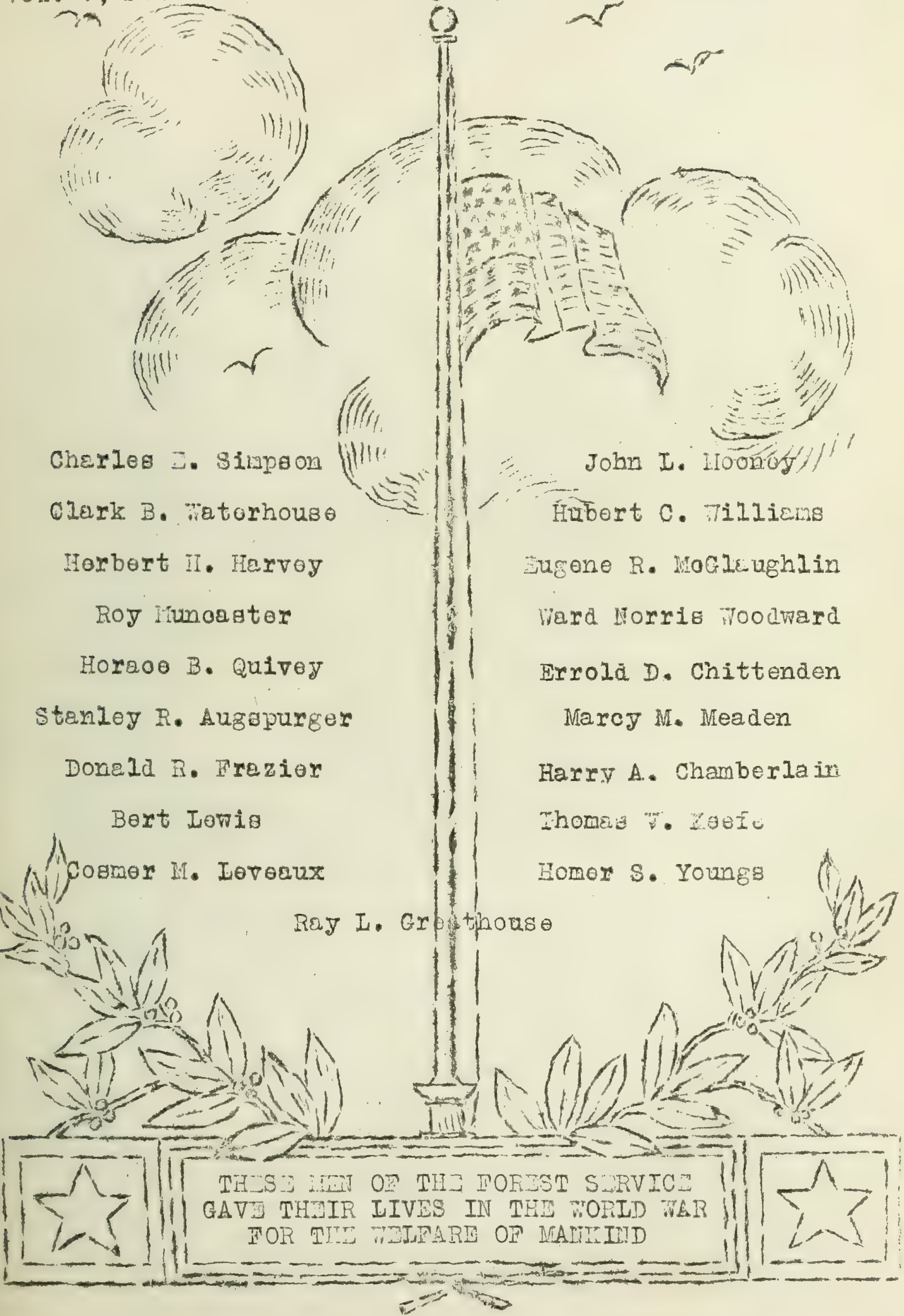

Charles E. Simpson
Clark B. Waterhouse
Herbert H. Harvey
Roy Muncaster
Horace B. Quivey
Stanley R. Augspurger
Donald R. Frazier
Bert Lewis
Cosmer M. Leveaux

John L. Mooney
Hubert C. Williams
Eugene R. McGlaughlin
Ward Norris Woodward
Errold D. Chittenden
Marcy M. Meaden
Harry A. Chamberlain
Thomas W. Keefe
Homer S. Youngs

Ray L. Greathouse

THESE MEN OF THE FOREST SERVICE
GAVE THEIR LIVES IN THE WORLD WAR
FOR THE WELFARE OF MANKIND

"IT MUST NOT BE AGAIN"

"Never death but somewhere a new life, never a sacrifice but somewhere an atonement, never a service but somewhere and somehow an achievement. These have served, which is the supreme inspiration in living. They have earned everlasting gratitude, which is the supreme solace in dying.

"I find a hundred thousand sorrows touching my heart, and there is ringing in my ears like an admonition eternal, an insistent call - 'It must not be again.' It must not be again!' God grant that it will not be, and let a practical people join in cooperation with God to the end that it shall not be.

"These heroes were sacrificed in the supreme conflict of all human history. They saw democracy challenged and defended it. They saw civilization threatened and rescued it. They saw America affronted and resented it. They saw our nation's rights imperiled and stamped those rights with a new sanctity and renewed security.

"They gave all which men and women can give. We shall give our most and best if we make certain that they did not die in vain. We shall not forget no matter whether they lie amid the sweetness and the bloom of the homeland or sleep in the soil they crimsoned. Our mindfulness, our gratitude, our reverence shall be in the preserved republic and the maintained liberties and the supreme justice for which they died.

-- President Harding.

How to Cooperate with the Press

(Forest officers who have to deal with newspaper reporters and editors in giving out information on the National Forests and work of the Forest Service will find this article worth reading.)

Newspapers generally consider worth printing any information that will interest a considerable part of the public. The fact that the printing of news may result in financial gain to some persons does not materially alter the case, although it may to some extent qualify its treatment by newspapers. Theatrical, automobile and sporting news comes under this classification.

Of first importance is the matter of establishing confidence between yourself and the editor or reporter. Always "come clean." You might victimize a newspaper one time with an inaccurate statement of facts, but your loss in prestige and subsequent publicity would much more than offset any temporary advantage of that nature. Strive to bring about such a relationship that the editor will have implicit faith in any statement of fact because you make it. This can be brought about by scrutinizing closely for absolute accuracy all matter you submit for publication.

Do not attempt to force your way into the news columns with matter that is purely advertising, or relatively unimportant news. It will cause the editor to scritinize more closely, and with suspicion such publicity as may be submitted.

How to Cooperate with the Press (Cont.)

Take the reporter or the editor into your confidence in regard to deals pending. Rarely is a confidence of this kind violated. I have known many instances in which reporters have deliberately allowed themselves to be "scooped" rather than violate a trust and lose the confidence of the man who placed his faith in them. With advance knowledge, the newspaper man can be properly prepared to take care of the story and often he can give you publicity advice of material benefit, such as in the use of pictures, and he will cooperate to your advantage in other respects.

Go further with the reporter than just the activities in which you alone are concerned. Give him "tips" about the other fellow. You will thus accustom him to call frequently at your office, to depend on you and to feel under a certain obligation because you provide him with that from which he makes his living - news. He will see publicity for you in ways you never dreamed of, often in little facts of human interest.

From time to time call on your newspaper editor and discuss with him your business, your profession, and public affairs. He will appreciate your interest in his newspaper and in him and will be glad to obtain your professional viewpoint. You will be surprised at the interest of newspaper men in these matters when they once clearly understand them.

Get to know the reporter personally. Do not overlook this fact that the men who write the news for the papers breathe, eat, are happy or sad, have ambitions and have about the same reactions to the various influences they encounter as do you or any other normal human being. It will pay you to occasionally call on him for an opinion of a subject under discussion. Being human he will appreciate the recognition, but, more important, you may get a light thrown on a perplexing problem from a new angle - the view of a man with a mind trained by his profession to quickly sense the public reaction to a course of action. By Don Goss, Publicity Director, National Association of Real Estate Boards.

Redington Against Change in Name of Sequoias

I have read the suggestion of Mattoon that the names of the two species of Sequoia might well be changed, also the comments of Messrs Sudworth and Dayton.

I have never heard any general dissatisfaction expressed here on the use of the word "Big Tree," and Mattoon must be mistaken (as to California at least) when he says "Everybody knows the two trees as redwoods." That some confuse the two species is true, and it is unfortunate, perhaps, that years ago a clear differentiation in nomenclature was not worked out. The majority of people, however, that I talk with about the Sequoias here clearly differentiate between the "Big Tree" of the Sierras and the redwoods of the coast.

I fully agree with Mr. Sudworth that this is not the time to bring the matter up. I would go further and say, after discussing the matter with the members of the Sierra Club, that a proposal to make such a change would not meet with approval locally.

The word "Big Tree" defines and dignifies the Sequoia gigantea. I sincerely hope that the matter will not be seriously pressed because I am pretty sure it would lead to further confusion and meet with strong opposition from Californians.

Annual Forest Service Stag Dinner

Secretary of Agriculture Henry C. Wallace and Assistant Secretary E. D. Ball were the chief speakers and guests of honor at the annual stag dinner of the U. S. Forest Service held May 13 at the Hadleigh in Washington. Seventy officers, many of whom have been in the Forest Service for over 20 years, were present at the reunion. Telegrams of greeting were sent to Gifford Pinchot and Col. Henry S. Graves, former chief foresters, to which the following replies have been received:

"Messrs. T. W. Norcross, Claude Ballard, and C. G. Smith,
U. S. Forest Service,
Washington, D. C.

Gentlemen:

Your telegram of the 13th has just reached me this afternoon. I appreciate it more than I can say. It was a matter of very great regret to me that I could not come to the dinner. Even if I had promised to come, however, it would have been impossible because Mrs. Pinchot suddenly developed danger of blood poisoning (now happily passed) in her right foot from the kick of one of the couple of colts we were riding about two weeks ago.

Present or absent, I am with the men of the Forest Service always. Good luck to every one of you.

Sincerely yours,
GIFFORD PINCHOT."

"Dear Mr. Norcross:

It was very thoughtful of the men in the Service to remember me on the occasion of their annual dinner. I appreciate very deeply the telegram signed by you, Mr. Ballard, and Mr. Smith. From the telegram I know how stimulating the gathering must have been, an occasion when the aspirations for achievement of big things found spontaneous expression.

No one knows the power of a few determined men united in a common purpose. If they think clearly and soundly, they can translate their ideals into a practical program of action. And herein lies the constantly increasing strength of the Service, the influence that will count in our national life in ways reaching far beyond the affairs of forests alone.

I wish that I might have been with you, to have shared in the inspiration of your meeting.

Faithfully yours,
HENRY S. GRAVES."

Mt. Rainier Wins Out

By Will C. Barnes

About thirty years ago (1890) the United States Geographic Board was appealed to to change the name of Mt. Rainier to Mt. Tacoma. The Board refused to make any change. In 1917 the subject, which had for many years been a bone of contention between the cities of Tacoma and Seattle, was again brought before the Board, which again refused to make any change in the name given this mountain be Vancouver, who discovered and named it in the summer of 1792. Recently the matter has again been taken up and brought before the Board, but from an entirely new angle, the third attempt to secure a change having come from the G.A.R. organization, which body desired to have the name Rainier changed to Lincoln.

Mt. Rainier Wins Out (Cont.)

Two public hearings were held by the Board, the last one, which was held recently, having been fought out in the auditorium of the Interior Department Building, to which the meeting was adjourned owing to the number present.

Representatives were present at the meeting from Seattle, Tacoma, and other Northwest points, as well as a large number of members and high officials of the G.A.R. organization.

At the last meeting the long-standing feeling between the two cities was aired in such strong language that the chairman of the Board, Dr. Hart Merriam, was forced to intervene several times and stop the dealing in personalities by the speakers for the rival cities.

It was evident that the city of Tacoma and the G.A.R. people had united forces on one point, i.e., to discredit the name Rainier as standing for a foreigner and an avowed enemy of this country during the Revolution and the War of 1812. They undoubtedly had figured out that with the old name wiped off the maps they could then fight for a new one -- either Lincoln or Tacoma -- with excellent prospects of success. General Miles and several speakers for the G.A.R. put the Seattle representatives in rather a delicate position by demanding to know if they stood for "the preservation of a name so repugnant to all true Americans." Much to their discomfiture, they were forced to admit that they did not intend to do so, although they realized at once that with the name Rainier gone it would then be a battle between Tacoma and Lincoln.

It was shown by the Board that there are at present eleven mountains in different parts of the United States named Lincoln, three of them being in the State of Washington alone, two within sight of Mt. Rainier.

The Board, at a meeting held on May 11, declined to reconsider their decisions of 1890 and 1917. The basis for this decision, of course, was the long-standing agreement amongst geographers that the original discoverer is entitled to the honor of naming such geographical points, and that the name Rainier had been accepted by the entire geographic world and used on all maps for almost 130 years.

They also showed by excellent documentary evidence that the name Tacoma, Tah-ko-bed, or Tahoma, with various spellings and pronunciations, was not applied by the Indians to any particular mountain but was a generic name which the Indians of that region applied to any great snow-covered peak.

A most interesting part of the discussion was an address on the subject by an Indian, Mr. Harry Cicade. This man, who is now living on a farm in Washington, read a most interesting and appealing paper, giving three separate legends which he claims are a part of the folk-lore of the Indians of that region, each of which referred to the mountain now known as Rainier as Tahoma, Tacobed or Tacoma. His plea that the mountain be named Tacoma in order to perpetuate the memory of the Indians of that region was not accepted by the Board, however, the members pointing to the fact that hundreds of Indians names exist in the Northwest covering streams, mountains, bays, lakes valleys, glaciers, etc., which is proof that, as far as the Indians are concerned, they have not been overlooked in the naming of natural landmarks in their memory.

SALUTE TO THE TREES

Many a tree is found in the wood
And every tree for its use is good:
Some for the strength of the gnarled root,
Some for the sweetness of flower or fruit;
Some for shelter against the storm,
And some to keep the hearth-stone warm;
Some for the roof, and some for the beam,
And some for a boat to breast the stream;-
In the wealth of the wood since the world began
The trees have offered their gifts to man.

But the glory of trees is more than their gifts:
'Tis a beautiful wonder of life that lifts,
From a wrinkled seed in an earth-bound clod,
A column, an arch in the temple of God,
A pillar of power, a dome of delight,
A shrine of song, and a joy of sight!
Their roots are the nurses of rivers in birth;
Their leaves are alive with the breath of the earth;
They shelter the dwellings of man; and they bend
O'er his grave with the look of a loving friend.

I have camped in the whispering forest of pines,
I have slept in the shadow of olives and vines;
In the knees of an oak, at the foot of a palm
I have found good rest and slumber's balm.
And now, when the morning gilds the boughs
Of the vaulted elm at the door of my house,
I open the window and make salute:
"God bless thy branches and feed thy root!
Thou hast lived before, live after me,
Thou ancient, friendly, faithful tree."

Henry Van Dyke in Scribner's.

NATION-WIDE OBSERVATION OF FOREST PRESERVATION WEEK

Nation-wide cooperation has been assured the Forest Service of the United States Department of Agriculture for Forest Protection Week which began Sunday, May 22. The governors of 14 States have issued proclamations impressing the people with the importance of using every possible precaution to prevent fire throughout the year, not only in forests, but in every other place endangering the safety of human life and property. These 14 States are Arizona, California, Colorado, Idaho, Illinois, Maine, Massachusetts, Mississippi, New Mexico, South Dakota, Utah, Virginia, Washington, Wisconsin.

In addition to this help the governors of seven States: Minnesota, New York, North Dakota, Oregon, Pennsylvania, Texas, and Montana, prepared special statements urging the general observation of Forest Protection Week, while eight governors declared themselves favorable to the best possible form of forest protection, although issuing no formal proclamation. These were Arkansas, Connecticut, Kentucky, Louisiana, Missouri, New Hampshire, Rhode Island, and South Carolina. Other governors, known to be friendly to the protection and conservation of forests, doubtless have issued proclamations or statements which have not yet been received in Washington.

Probably no previous effort inaugurated by the Forest Service has received such prompt and cheerful support from every department of business. The Chamber of Commerce of the United States; the International Kiwanis Clubs; the American Automobile Association; National Board of Fire Underwriters; International Association of Rotary Clubs; National Fire Protection Association; the General Federation of Women's Clubs in virtually every State in the Union; the Daughters of the American Revolution, all have sent out letters, or especially prepared circulars, drawing attention to the special purpose of the week. The American Automobile Association sent copies of the letter issued by the Secretary of Agriculture to every club in the country. State foresters in many States have started one form or another of publicity to induce talk and create continued interest in the one big subject of the week.

The Boy Scouts of America, considered by the Forest Service to be one of its most efficient allies in preventing forest fires, issued a special forest protection number of the monthly publication, "Scouting," for May, and Forester W. B. Greeley, and Chief Scout Executive James E. West of New York, sent 10,500 letters to scoutmasters and scout executives everywhere in America. The Post Office Department is running 22 fire prevention cancellation dies in many of the principal post offices throughout the Nation so that every letter sent from these offices will carry the message to the recipients. In six Western districts of the Forest Service with headquarters at Denver, Colo., Albuquerque, N. Mex., Ogden, Utah, Missoula, Mont., Portland, Ore., and San Francisco, Calif., officers of the Service are conducting publicity campaigns, and 2,000 rangers throughout these States are putting forth every effort to make the people think about little else, for a week, at least, except how to keep down losses from fire.

In Washington, D. C., the D. A. R. will observe the occasion by planting trees, and in other ways do all they can to make the week one to be remembered. The American Forestry Association held a special Forest Protection Week demonstration in Rock Creek Park on Monday. The National Board of Fire Underwriters sent out 160,000 copies of its official publication, Safeguarding America Against Fire, to every city and town. In this issue it is shown that in the last five years the forest fires in 45 States have cost the country $85,715,747 for timber burned on nearly 56½ million acres. At least 80 per cent of these fires were caused by human agencies and were, therefore, preventable.

How Did You Do It?

By Wm. H. Friedhoff, D-5

The article in the April 11-18 issue of the News Letter, "Economy in Planning Summer Home Sites," shows a survey platted 1 inch to 100 feet, with 5-foot contours, trees and shrubs located, lots and commercial sites located (on map) and complete road plan figured for a cost of $1.26 per acre. Furthermore, that the area can be staked out in accordance with the map plan for an additional cost of about 60 cents per acre, making a total cost of $1.85 per acre, "making it possible that each lot can be given under permit with a cost of not to exceed $2,50 per lot." * * * "It is believed that this sets a new record." We'll say it does, and furthermore we are ready right now to take off our hat to District 2, although we don't know whether for economy in doing the work or for efficiency in cost-keeping.

During the past 5 or 6 years the writer has laid out in District 5 about 2,000 summer home sites. These included two large groups of 350 and 500 lots each. Topographic maps of the two large areas were made as a preliminary to the actual laying out of the lots. Trees and shrubs were not located.

The costs of these operations were about as follows:

Transportation in connection with developments, about 10 cents per lot.
Redwood stakes, paint, stenciling, etc., 30 cents a lot.

Survey of lots (in field),	$2.00 each.
Mapping lots,	20 cents each.
Topography (field work and map),	80 cents each.

Total, $3.40 per lot.

For one of the areas the cost was probably in excess of $4.00 a lot.

Lots laid out without preliminary planning, simply staking and surveying, cost for the average lot as follows:

Survey,	$2.00
Stakes,	.30
Mapping,	.20
Total	$2.50 a lot.

How Did You Do It? (Cont.)

Where patented lands must be located in connection with such a survey, the cost per lot is naturally higher. These costs are under modern conditions and every item connected with and properly chargeable against the project is charged, including the engineer's time and transportation expense, expense of preliminary and final plats, etc.

Ten years experience in the Forest Service makes us skeptical of "figgers," for we have seen some wonderful stunts done with them, so we will not get excited over this "economy" until we are shown.

Will state further that some of our homesite tracts in this district were "laid out" at a cost of about 20 cents a lot, but when we ~~are~~ "showing off" our work we don't take visitors to these sites.

Results of Cutting on the Minnesota

By Fred. R. Johnson, D-2

There is a general impression that the provisions of the Morris Act of June 27, 1902, for leaving 5% (in 1908 amended to 10%) of the total volume of standing timber for seed trees on the Minnesota Forest, have not resulted in securing reproduction. A recent estimate by Supervisor Marshall places the area of cut-over land on which there is a satisfactory stocking of Norway and white pine second growth at 50,000 acres. A sample plot in typical Norway pine land cut over in 1908-09 near the Cut Foot Sioux Ranger Station shows an average of 5,392 seedlings per acre. These seedlings range in height from three inches to four feet, and 95 per cent of them are Norway.

Since the Attorney General's decision of January 24, 1917, which permitted the Secretary of Agriculture to sell dead and down pine timber on cut-over land, many of the seed trees which had blown down have been sold. One sale of 2,000,000 feet B. M. of down material on sixteen sections was made, thus illustrating that loggers will return for small amounts of timber and that the removal of timber in several cuttings under proper management is feasible.

The results in the white pine-hardwood type have not been so successful, as hardwood sprouts came up so rapidly after the pine was removed that the pine seedlings have been crowded out. This type now consists of popple, birch, oak and basswood, with the few scattered white pine seed trees towering over the hardwoods. The future management of this type - whether the hardwoods should be clear cut, as merchantable, and the land planted to white pine or white spruce, or whether the hardwoods are but a temporary type which will eventually be replaced by the white pine seedlings that are coming through - is a study worthy of the efforts of any investigator. About 30,000 acres of white pine-hardwood type has been logged since the passage of the Morris Act.

There are 30,000,000 feet B. M. of timber yet to be cut under the Morris Act, after which, according to the law, the land and timber will be appraised and settlement made with the Indians. The land will then be turned over entirely to the Forest Service.

The total area of National Forest lands within the Minnesota Forest is 190,602 acres. In addition to the above listed cut-over lands, there are large areas of jack pine, some of which is mature and ready for cutting and on which several sales have already been made, as well as large areas of sapling and pole jack pine stands. There is also a considerable area of mixed Norway pine and jack pine pole and sapling stands and a smaller area in the pure hardwood type. To date, 2,514 acres have been planted.

WASHINGTON NOTES

In respect to Edward Douglass White, Chief Justice of the United States, all Government offices in Washington were closed on Saturday, May 21, when the great jurist was laid to rest. The Stars and Stripes at half-mast marked every flagpole in the city, except the staff of the White House, where a flag is only flown at half-mast in the event of the death of the President or of some foreign ruler.

Service Photographers: In filling out the new loose-leaf Photographic Record (Form 166), use a separate sheet for different States and National Forests, or if these data are grouped at the top of the form, indicate after each description the location of the scene by State and Forest.

A minimum of 3-1/4 x 4-1/4 inches has been established for Service collection photographs. Smaller negatives may be accepted, if they are of high class and present unique features worthy of enlargement.

From 50 to 90 per cent of the photographs taken in the field are not suitable either for permanent record or reproduction. No one ever got a good picture by just "pressing the button," except by chance. It requires just as much thought and care to take a good photograph as it does to "spot" an even-aged stand on a timber sale.

District 5 wants Bulletin 440: Copies of Department Bulletin 440, "Lumbering in the Sugar and Yellow Pine Region in California," are needed by District 5. Should any one have extra copies please send them to the District Forester at San Francisco, Calif.

The Thin Red Line: National Forest receipts for the period July 1, 1920, to April 30, 1921, show a total decrease of $1,308,267 as compared with a like period in the previous year. Trespass and Special Use are the only activities registering increases. Deferred payments of grazing fees show red in the sum of $942,792.

The April 30 Statement of Receipts is noteworthy in several respects. District 7 has moved up another notch in the standing of Districts in timber sale receipts and on April 30 stood above both District 3 and District 4. Another interesting point is that District 1 is the only District which shows an increase in timber sale receipts over the previous fiscal year.

The apparently heavy receipts from timber trespass in District 1 do not indicate any laxity on the part of present or former officers in that District. A payment of over $40,000 was received on what would now be classified as a contract-bond sale. The case was the first of its kind and was due to the killing of timber on lands of unsettled status by the fires of 1910. It was given a timber trespass designation then, since the contract-bond procedure had not been standardized. -- E. E. Carter.

Miss Selma A. Hadden is one member of the Forest Service who never reads the Service Bulletin after it is mimeographed. And for a good reason - she has to cut the stencil each week. Miss Hadden is away on vacation, so if you note a mistake here and there in this issue you will know it is due to willing but inexperienced hands.

The Service Bulletin needs a number of snappy, interesting articles from two to four pages long (double space). Here is a chance to limber up your forefinger and the Oliver, and also to save our "House Organ" from playing the same old, dull tune week after week.

FOREST PRODUCTS LABORATORY

A High-Priced School: Thirteen men traveled on an average of 2000 miles each and paid a $100 tuition fee to attend a one-week course given by the Laboratory in box making. The three states farthest from Wisconsin, east, south, and west, sent men representing their chief industries. The man from Massachusetts wanted to know how to build shipping cases for shoes, the Californian the best way to crate pineapples, and the Texan brought along about a hundred 5-gallon oil cans to be battered up in the testing drum in finding out how to crate them securely.

Wood Preservatives Reduce Fire Hazard: Decaying wood is very inflammable and when dry may be ignited by a mere spark. Sound wood in large pieces is comparatively hard to ignite. Wood preservatives by keeping wood sound act, in one sense, as fire retardents, although none of the common preservatives have in themselves any fire-proofing properties. Untreated timbers in a mine passage, for instance, will be found in various stages of decay, and the danger of fire, therefore, is much greater there than in a mine in which the timbers are kept sound by preservatives.

New Service for Commercial Plants*: A policy recently adopted by the Laboratory permits it to offer a new type of service to commercial plants, namely, the lending of one of its engineers for a few days to factories which are having difficulties in kiln drying or manufacturing operations connected with the use of wood. It has been found that several days' study at a plant is usually a quicker and cheaper way of remedying troubles than voluminous correspondence.

For service of this character there is a flat charge, based on the actual cost to the Laboratory, of $15 a day for each day that the engineer is away from Madison, plus railroad fare and living expenses during this period. Factories located many hundreds of miles from the Laboratory, as well as those in adjacent cities, are availing themselves of this service.

Everybody Slinging Mud At the Laboratory: Since the Laboratory announced the discovery that certain American clays can be used in paper making it has been pelted with mud and inquiries from owners of clay-banks in all parts of the country. The fact that this paper-maker's clay has cleansing properties similar to those of soap has aroused hope in many persons, who evidently have found the soil on their premises a fair substitute for "Sapolio" or "Skat." One recent donor of a chunk of clay was the proprietor of a summer resort, who it appears has been supplying his patrons with cakes of this clay to wash with. So you see you can not get square with a hotel-keeper even by carrying off the bath soap.

Campaign for Protection of Mine Timbers: How to get the mining industries interested in protecting more of the wood used in mines against decay is a problem upon which both the Forest Service and the Bureau of Mines are now working in cooperation. Enormous quantities of timber are being placed in mines without any preservative treatment. At least three preservatives have been found which will greatly prolong the life of these timbers. Therefore, the problem is not one of testing out preservatives so much as conducting a publicity campaign which will bring to the attention of the mining companies the facts about the tests already made.

The Bureau of Mines will attempt to carry on the campaign this summer largely by means of personal contact. Mr. R. R. Hornor of the Bureau has just spent a week at the Laboratory making plans for the work and has now left for an extensive trip through the western mining regions. He will visit the mines in Montana and South Dakota, with which the Laboratory has already carried on tests of preservative treatments.

Ranger Bill Says:

There's a heap of fellers in the Service that's viewin' field problems thru the wrong end of the telescope.

It sure's a painful pleasure to see the field shoes I paid $15 for last fall sellin' for $7.49.

Wireless ain't got nothin' on the Service "underground news system" for speed and efficiency.

Note: I don't claim no relationship to "Efficiency Bill."

DISTRICT 1 - NORTHERN DISTRICT

New Game Commission for Mantana: The last session of the legislature in Montana revised very materially the fish and game laws. Practically the entire responsibility for all game matters was placed in the hands of a Commission of five men. Governor Dixon has made the appointments and the meeting of the new Commission was held April 19 and 20 at Helena. They selected the State Game Warden and Superintendent of Fish Hatcheries and sent out examination papers to the 500 applicants for the deputy jobs. Since there will not, in all probability, be more than 20 to 25 men appointed the Commission should be able to get some really efficient officers.

The Commission holds its second meeting May 7, and the District Forester has submitted for their consideration a very complete and comprehensive cooperative agreement between the Forest Service and the Commission. Under this agreement all Forest officers whose duties take them into the field will be appointed special Deputy Game Wardens, which will add approximately 218 men to the force of game protectors.

The Commission appears to be well chosen and we look for real cooperation and a definite plan of game management for Montana, with its natural game ranges and thousands of miles of trout streams. Montana, under proper management, is destined to be the sportsmen's and tourists' paradise, besides a good place for a forester to live and enjoy life.

Lick Creek Road Project: It is expected that the Lick Creek Road Project on the Jefferson Forest will be completed by the end of May. Although built primarily to make a supply of timber available to ranchers adjacent to the Forest, this road incidentally opens up to the people of Great Falls and vicinity a region rich in recreational opportunities.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Dean F. F. Moon of the New York State School of Forestry, Syracuse, was a visitor at the District office the early part of this week, going over the practice followed in timber sales, forest planting, and work being done along recreational lines. It is [illegible] understood that he was also conferring with men for possible additions to the faculty at the Forest School.

Seed Extraction: The extraction of the seed from 662 bushels of Norway pine cones, which were collected on the Minnesota Forest last fall, was recently completed. Four hundred fifteen pounds of clean seed were secured at a total cost of $3.44 per pound. There has been a great scarcity of Norway pine seed throughout the United States for the last five years, and recent catalogues of seed dealers list this species at from $7 to $17 per pound. At an average price of $10 per pound, the value of the seed collected on the Minnesota Forest represents a considerable saving to the Forest Service over purchase from commercial dealers.

Eighty-five pounds of jack pine seed have been extracted at a cost of $4.18 per pound: an equal amount remains to be extracted.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT (Cont.)

Planting Reconnaissance on Minnesota: Supervisor Marshall and Ranger Petheram are making an extensive planting reconnaissance of the Minnesota Forest. Data now on hand indicate that all denuded areas can be planted or will be satisfactorily stocked within the next ten years if fires can be kept out. The final report will be completed by January 1, 1922.

Forest Examiner Tillotson of the Washington office accompanied Forest Examiner Johnson on the Michigan and Minnesota Forests, during the month of April, on an inspection of all reforestation work.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Does it Cost Less to Live? A cash and carry store in Albuquerque has a window display graphically showing the relative cost of food commodities today and one year ago today. One side of the window contains three items - a hundred-pound sack each of sugar and potatoes, and a 24-pound sack of flour. On the opposite side are the three same articles but almost hidden from sight by a collection of all imagineable food items - 86 separate pieces in all. The articles include canned fruits and vegetables, cereals, syrup, butter, 18 pounds of high grade shortening, a ham, side of bacon, 40 bars of soap, a dozen cans of milk - even a hundred-pound sack of beans. The cost of the first three articles a year ago was $39. The cost of the same three articles today, plus 86 more items, is also $39.

An Economy Idea from Santa Fe: "It often becomes necessary when a car is in constant use to drain the old oil out of the crank case and flush it out with kerosene, putting in new oil. I find this old oil and kerosene mixed just as it comes out of the car far superior for greasing fire tools, to anything else I have used. It prevents rust from dampness, and does not dry or get gummy. Comes off at once when tools are used. May be used on saws as well as other tools, and is easy to apply. Wooden handles will not become dry and brashy if they are well oiled with this oil."

Essay Contest on Prescott: For Forest Protection Week, Supervisor Wales of the Prescott has initiated in the high schools and public schools of Yavapai County, an essay contest, the school producing the winning essay to be presented with a large United States flag. The County Superintendent and a representative from each of the two local papers, and the Supervisor, will judge the essays.

Prescott Advertises its Wares: A recent display advertisement in the Prescott Journal-Miner carried the following legend: "The Prescott National Forest offers opportunity for healthful recreation. Help Protect it From Fire." The ad was paid for from personal funds, by Wales and Munro of the Prescott office.

Fire Started From Airplanes? A recent fire in an isolated spot on the Huachuca District of the Coronado has Ranger Rodgers guessing as to its origin. "Rolling rocks may have started it," says Rodgers, who, after dismissing this reason as rather unlikely, asks "Do men who ride in airplanes smoke?' If they do, and one were to throw overboard a lighted cigar stub at, say 1000 feet, would the falling stub, owing to the draft, be a better stub for starting a fire than one thrown from the horse's back; or would the fall put it out?" Rodgers says planes pass over the locality of the fire almost daily.

Kirby Tells Them: Deputy Supervisor Kirby of the Crook has had printed at his expense for distribution to visitors to his district a small card bearing several fire slogans, an invitation to enjoy the recreational resources of the Pinal Mountains, and fire and camp sanitation advice.

Motorcading, the New Pastime: The newest development in Forest recreation is the announcement by the Chamber of Commerce of Nogales of a May day "motorcade" to Bear Canyon on the Coronado. Nogales is one of the towns contemplating municipal playground camps on the National Forest.

Motion Picture Activities in April: During the month that the six reels of Forest Service motion pictures were in the District, they were run in whole or in part at 54 separate shows. It is estimated that well over 10,000 people saw the pictures. About 2000 people attended special shows at which only the Government films were shown.

Suggestions on Use of T.N.T.: Trail crews having occasion to blast out stumps and loosen up stiff soil will get the best results from T.N.T. by mixing it with 30% of dry road dust or cement, this method being more effective and at the same time saves explosive.

Cattle Moving on Crook: McLane, a permittee on the Crook, has an order for 10,000 head of cattle, for yearlings, twos and threes priced at $20, $30 and $40, respectively. First 400 head cash, rest six months paper. Shipments commence May 15th.

A Poacher Bagged on Gila: On May 5, Ranger Ray Painter took Mr. Chas. McKinney of Lake Valley, N. M. before the Justice of the Peace at Hillsboro, N. M. for killing deer on March 17, 1921. Mr. McKinney was fined $50.00 for the offense and $1.00 costs. Quite a good deal of detective work was necessary on this case and it was well handled throughout.

Project Approved on Tonto: The Forester has approved the expenditure of $13,750 on the McFadden Hill road on the Tonto Forest. The Gila County authorities have gone into this proposition on a 50-50 basis up to $27,500, and if the cost exceeds this figure, the county will pay the excess.

Grazing Reconnaissance Crew Out: Messrs. Culley, Cassidy, and Morris left for the field on May 5 to start grazing reconnaissance work for the season. The party will stay first at Espanola and work a portion of the Santa Fe, going to the Carson about June 1.

Allotment Boundary Posting: The posting crew, consisting of Ranger Fred Miller, in charge, Ranger Johnson and Forest Assistant Hamilton, and part of the time, Rangers Cook and Gage, posted 132½ miles of sheep allotment and boundary lines in nineteen days. The cost of the work, excluding salaries, was approximately 75 cents per mile. Including salaries, the cost was $3.15 per mile.

Scrub Tree Expert: Ranger Fred Miller who has been working on the woodland study on the Tusayan for the past year came into the District office a week ago and has been working up field data. One of the Albuquerque papers carried a story on Miller's work the day after his arrival, heading the article "Scrub Tree Expert of Forest Service in Town."

What a Difference Two Days Can Make! On Thursday morning Bill Williams, lookout, reported fires on different parts of the Tusayan Forest, and on Saturday morning he reported fifteen inches of snow in the vicinity of his cabin. On account of clouds, that was as far as he could see. Ranger Cook reported fourteen inches of snow at Spring Valley. The Weather Observer reported seven inches of snow at Williams. The early fire season is temporarily stopped.

Boy Scout Camp Permit: The District Forester has approved the issuance of a permit to Alamogordo Troop No. 1 of the Boy Scouts of America for the use of an area near Caballero Springs for camping purposes.

DISTRICT 3 - SOUTHWESTERN DISTRICT (Cont.)

Getting Used to It: Two tons of T.N.T. are snugly stored in the old brick office "on the hill." "Old Government Joe" dropped one of the hundred-pound boxes of the stuff and we held our breath for a second or two and then laughed. When, somewhat later, one of the mules "stacked" his load, we cussed without holding our breath. Nothing like getting used to a thing.

Skunk Puts Girdner Out: Word has been received from the Coconino that while camped south of Clear Creek on the night of May 3, Deputy Supervisor Girdner of the Coconino was bitten by a skunk. Girdner left at once for Flagstaff, and physicians there ordered the Pasteur treatment to forestall hydrophobia complications. Three weeks at an institute giving this treatment will be necessary to repair damages.

Predatory Animal Record for April: During April the six predatory animal hunters of the Biological Survey in New Mexico each scored in the honor roll by bringing in one or more lions or wolves. Eleven mature wolves and lions were hung up by the heels, ten wolf pups were accounted for and four unborn lions kept from seeing the light of day.

Chasing Contours: Do the little brown lines on the maps have you guessing sometimes? Do you ever make a map and find later that you have made a stream run uphill or failed to give a mountain peak all its dues in the way of contours? At one time, in all our careers, the mysteries of contours were unsolved, but gradually all of us saw more less light on the subject. Based in part on a system which he learned at Artillery School, Grazing Examiner Talbo prepared a talk which he gave at the Supervisors' meeting that opens up the short cut to learning the contour business. A model which he had constructed did most of the talking. Photographs of this model and a description of it have been sent to all Forests.

Taos, the Headquarters of the Carson:

Is the third oldest city in the U. S.

Has two of the oldest churches in America.

The home of the first newspaper published west of the Missouri River, "EL CREPUSCULO." If you have a copy it is worth $500.

The residence of the first civilian governor of New Mexico under American rule, Governor Bent.

The Governor was also assassinated here.

The native place of Jose Gonzales, the only full blooded Pueblo Indian ever to become Governor of New Mexico - by force of arms and conspiracy.

More artists to the square inch than anywhere else in U. S.

Range Conditions Near Tucson: Arivaca Land & Cattle Company shipped from Amadoville on April 16, 600 head of cows going to Tuscon pastures. This makes a total of approximately 8,600 head of cattle shipped by this company in the past six months. Their leased lands are completely bare of grass, and the extreme drouth in that vicinity, since last spring, has left even the Forest range in poor shape; the cattle left are in poor condition.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

New Federal Building for Elko: "The local Woodmen of the World lodge has bee instrumental in having a bill introduced in Congress appropriating $150,000 for the construction of a Federal building in Elko. We are making a requisition for the space required for the Forest office as required by the Supervising Architect in Washington. The building will be equipped complete with tennis courts on the roof and a plunge in the basement. Large leather-upholstered arm chairs will be provided for the office employees. Also the rangers' assembly room will contain about a dozen revolving swivel chairs. The reception room will be provided with a phonograph and will be in charge of a courteous office boy -- Say, just excuse us a moment while we roll another pill."

-- Humboldt Hummer.

Tax on Transient Stock Unconstitutional: An interesting decision by the Supreme Court of the State of Arizona was noted in the public press the other day. Arizona has had in existence some years a special tax on transient stock which has resulted in the arrest of a number of the Utah growers. Some have paid fine rather than fight the matter. The lagality of such tax was questioned, however and finally reached the Supreme Court of the State, which held that the tax was unconstitutional. This will result in material relief to the stock growers of the southern part of the State of Utah.

Grand River Now The "Colorado": A bill was recently signed by the Governors of both Utah and Colorado changing the name of the Grand River to Colorado River.
-- Moab News Letter.

A Glance Into the Future: Supervisor Parkinson has an excellent two-page illustrated article in the April issue of the New West Magazine under the title, "Salt Lake and the National Forest in 1930." The article pictures an intensive recreational use and appreciation of the Wasatch Forest by the people of Salt Lake and tourist visitors.

Humboldt Horse Trespass Cases Adjudicated: Messrs. French and Olson recently returned from Boise, where the following cases were disposed of by Judge Dietrich, in the United States District Court. The amount asked, and that awarded, is shown, from which it will be observed that the Court was of the opinion that our basis in these cases (10¢ per head per day) was not warranted.:

	Asked	Awarded
Kitty Wilkins - - - - - - - - - - - - -	$75.00	$ 40.00
Fred L. Smith - - - - - - - - - - - - -	82.50	44.00
Al. Barber - - - - - - - - - - - - - -	75.00	30.00
Ed. Rund - - - - - - - - - - - - - - -	22.50	12.00
Vane Whitesides - - - - - - - - - - - -	37.50	20.00
Chas. Roberson - - - - - - - - - - - - -	187.50	100.00
		$ 246.00

Each defendant, in addition to the damages indicated, will be taxed costs which will be in the neighborhood of $20 in each case.

In addition the Court granted the Government a permanent injunction restraining defendants in the future from trespassing upon the Forest.

Forest Officers Demonstrate Fire Fighting: "We had an opportunity yesterday to stage a little publicity program along the line of fire prevention and suppression. Some one allowed a fire to escape in the timber along the river below Mackay. A high wind was blowing, and in a short time the fire was threatening some valuable farm buildings and a 75-ton haystack near town. Most of the town turned out to see the excitement and the town fire department answered the call. They apparently decided that this kind of a fire was a little out of their line, so called the Forest office and requested the Supervisor to come out and take charge. In a short time a crew of fifteen men were constructing a model fire line around the buildings and a back fire started from the line. Within three hours the fire line was wide enough to make the place safe."-- Lemhi.

"Miss Eula G. Morton of Dubois has been given the position of Lookout on Swanholm for the coming fire season. She will be accompanied in her work by Miss Josephine Morton of Arizona. Both have had mountain experience."
-- Boise Accelerator.

District 1 to Retain Adams: We have just had word from Telephone Engineer Adams that he expects to arrive in Ogden about June 5 for the purpose of packing up the wireless equipment for shipment to the Idaho. After the wireless instruments have been installed he expects to spend about two weeks on new wire line construction in that vicinity before returning to District 1. We regret very much to announce that after this work is completed he will spend all of his time in District 1. That District has so much telephone construction that they secured the approval of the Forester to retain "R.B. continuously.

Dr. Sampson Returns: Dr. Sampson arrived in Ogden yesterday from Washington, where he has been for a number of months. On his way out he stopped at the Nebraska State Experiment Station at Lincoln. He is leaving this morning for the Experiment Station at Ephraim to begin the summer's work.

Antelope Season to be Closed: "The last legislature passed a bill opening the season for antelope in this State. The Supervisor and Mr. E. R. Sans of the Biological Survey took the matter up personally with the Commissioners of Humboldt County and were assured that the Commissioners would approve maintaining an entire closed season in that County as soon as a petition was received to that effect, which is required by law. In like manner the Supervisor and the president of the Fish & Game Club appeared before the Commissioners in Elko and received assurance that the season would be entirely closed also in Elko County.

Mr. Sans feels sure that Washoe County will also close the season, which, together with Humboldt and Elko counties, will insure protection of the 800 to 1000 antelope that are in the northern section of this State, southern Idaho and southern Oregon." -- Humboldt Hummer.

Attractive New Folder Issued: "The Cedar City Commercial Club is distributing a very attractive little folder showing views of Zion National Park, Grand Canyon, Bryce Canyon, and Cedar Breaks, and also Kaibab, Powell-Sevier and Dixie-Sevier Forests. These will be mailed to prospective visitors to Southern Utah and will also be distributed to passing tourists by the caretaker at the City Camp Ground." -- Dixie Doings.

Fish Hatchery May be Constructed: "State Fish and Game Commissioner Madsen" (Utah) "has recommended to the proper State officials the allotting of $5000 for the construction of a fish hatchery at the upper DeWitt Meadow in Logan Canyon. Local sportsmen are enthusiastic over the prospect of securing facilities for the adequate stocking of the streams in Cache Valley. Present indications point to favorable action on the Commissioner's recommendation.
-- Cache Register.

Association Has Two-Fold Purpose: Residents of Richfield and the surrounding country, many of whom have permits for summer homes at Fish Lake, are organizing a combined fish and game and summer home association. This association is primarily for the purpose of stimulating interest in fish and game questions and to look after sanitary and allied conditions in the summer home colony at Fish Lake.

Never Forget These Points:

1. No. "leave" can be taken during fire season.
2. Sundays and holidays don't occur in fire season.
3. Fire camps must be kept and abandoned in a scrupulously clean and sanitary condition.
4. Over-night fires are not recognized. Start to the fire NOW, when reported.
5. Be SURE a fire is out before you abandon it.
6. Keep a big stock of personal supplies during fire season.
7. Swat the "elapsed time."
8. A horse is sometimes a hindrance.
9. A broken telephone line is second only to a known fire in hazardous possibility--Keep lines up and working.
10. Before the fires is the time to repair tools.
11. An axe and shovel will be carried on every trip away from your station, even for a short ride.
12. Telephone test from your station is to be made daily at or before 8 A.M.
13. The successful working out of this plan depends much on you.

-- Fire Plan - D-4

DISTRICT 4 - INTERMOUNTAIN DISTRICT (Cont.)

Ex-Supervisor is Appointed County Game Warden: "In turning over the Game work to Roy Mathias the Commissioners placed only one restriction on law enforcement, that, in addition to proving a man guilty of hunting or fishing without a license, it must be shown that he has had an opportunity to secure a license without making a special trip to town. Even with this extra burden we believe by cooperation with Mathias we will be able to put across some law enforcement this year. The fishing season opened yesterday and a large number of Ely people were out trying their luck." -- Nevada Nugget.

DISTRICT 5 - CALIFORNIA DISTRICT

Fire Publicity for Sportemen: We are furnishing the Forester with 650 copies of our Harry Hunter leaflet, which the National Sports Syndicate of New Haven will distribute to the sport editors of all the leading magazines and newspapers of the country. It is believed that the proposed distribution will place our fire material in the hands of a good many editors who will make use of it, and will result in a considerable impetus to the fire prevention publicity game throughout the country.

Steak Hounds Arrested on the Angeles: We have done arson squad work, purity squad work, and have had pretty lady campers arrested and fined for dipping their toes in the stream, but here is a new one:

Ranger F. H. Hayward, in Big Santa Anita Canyon, recently had three young men who are High School students of Los Angeles, turned over to him for stealing steak from another camper. They made the excuse that they were hun-hungry, but they had other provisions with them at the time. The boys were taken before the Probation Officer in Los Angeles, who put them on probation for six months.

California Forest News: William Meier has just killed another mountain lion above the Poison Glade Ranger Station on Log Spring ridge. This makes the third lion caught by Meier in that vicinity within the past month, all females, on which the State pays a bounty of $30 each, and Tehama County adds a bounty of $25 each, making quite a nice little return.

Our School Exhibit: Mr. H. O. Welty, Principal of Lockwood Junior High School of Oakland, Calif., says:

"Permit me to express my very great appreciation of the spelndid service rendered by the Forest Service Exhibit due to your courtesy in giving us the exhibit and to-splendid cooperation and efficient management of Mr. Fair and Sgt. Gundred.

"A thousand pupils and more than two thousand patrons received an insight into the work of the Forest, Air and Radio Services which they would not have gotten otherwise, and I feel sure that the fire hazard has been lessened by no small amount because of the careful and efficient instruction in fire prevention and forest preservation. I hope that every school in California will be able eventually to have this splendid exhibition. I feel sure that the trouble and expense would be more than justified."

Good Work, Judge! A tool chest was broken open on the Santa Barbara about six weeks ago and an axe stolen. When Ranger Biddison discovered this he took steps to locate the guilty party who then resided in Los Angeles. A search warrant was obtained, the axe found in A. E. Wilson's garage and the latter arrested. He plead guilty, was given a sentence of ten days in jail and the Judge threatened to impose six months sentence on the next man brought before him for a similar offense.

They Enjoyed Our Party: Walter Mulford, Acting Dean of the University of California, wrote the District Forester:

"Mrs. Mulford and I enjoyed so much the recent reception to Col. Greeley that we want to express our appreciation to whoever invited us and to the committee in charge. It was certainly an A-1 evening and we only regret that we were forced to leave so early."

DISTRICT 5 - CALIFORNIA DISTRICT (Cont.)

Deer Season May Be Changed: Assemply Bill No. 1092, which would have the deer hunting season open considerably later than at present, passed the Assembly and Senate and is now before the Governor.

Under the present law the hunting season opens just at the peak of our fire season and has always meant many more fires in the forests. Any law postponing the hunting season in the mountains will materially help to lessen the summer fire hazard.

No Reward for Guessing What Office Sends This: Gang fights, knockouts, broken teeth, a death-defying leap to the top of a passing trolley car. Rescue of a beautiful maiden, alone in a great city, from a gang of thugs, plus the ever present villain in the guise of an Italian fruit peddler with his push-cart loaded with oranges and bananas. All these events happening under our office windows during the past few days were found to be only another of Tom Mix's movie thrillers in the making.

It Pays to Advertise: During the past week five of the largest automobile firms on Van Ness Ave. have been showing Forest Service fire signs and other publicity matter in connection with their special outing displays, and two firms have considerable other Forest Service exhibit material in their show rooms. In fact we have been swamped lately with requests from automobile firms who want to use Forest Service exhibit material of all kinds, and no less than five requests for use of our big exhibit were on file at one time.

Angeles To Develop Another Auto Camp: "Several months ago the Automobile Club of Southern California gave us $1125 for the development of three public camps. Today it has given us an additional $500 with which to develop another camp in Mill Creek. This makes a total of $3,000 received on the Angeles during the past year for public camp development." -- R.H.C.

Something To Think About: Where does all the lumber go to that is cut each year? That is hard to say, and the persons who know the least about it are the lumbermen themselves. A few years ago bulletins were gotten out by various States to show for what purposes the lumber imported into that State was used. We hear recently of one power company in California needing five million feet this coming year for the development of some of its projects, the wood to be used for camps, tunneling, forms, conduits, dams, and general construction. We learn also from a railroad purchasing agent that two million feet of lumber valued at $50,000 is used annually in the construction and repair of the lowly freight car. Wood, in spite of increased costs, is much cheaper than steel, as all-steel gondolas cost 36 per cent more to maintain than the wooden car. American paper mills produced 1,511,968 tons of newsprint paper in 1920, an increase of 10 per cent over 1919. Automobiles used five hundred million feet of lumber last year, exclusive of one hundred million used in packing and shipping the cars, and this coming year an increased use of wood is indicated. New Homes are needed, roughly about 350,000 a year. Last year but 70,000 were built.

Our lumber resource is diminishing, the demand for lumber is increasing. There is no let-up in the drain on our timber in sight. Are we fully awake to our responsibility to the future?

DISTRICT 7 - EASTERN DISTRICT

Black Walnut Is Planted: Sixty and one-half bushels of black walnuts were planted during the past winter and spring on the Natural Bridge Forest at a cost of $2.49 per bushel. This cost included the cost of the nuts, amounting to $60.50, and Forest officers' contributed time amounting to $42.74. The nuts were dibbled in, and the spacing was 6' x 6'. Most of the planting was done on abandoned fields on the Pedlar River watershed, from which the City of Lynchburg derives its water supply.

Trying Out Chinese Chestnut: Through the efforts of Mr. G. F. Gravatt of the Bureau of Plant Industry, fifty Chinese chestnut seedlings (Castanea Mollisima) were sent to the Natural Bridge Forest and were planted on an area adjacent to a severe chestnut blight infection. These new and promising blight-resistant chestnuts have been produced by the Bureau of Plant Industry in cooperation with Dr. Walter Van Fleet of the office of Horticultural and Pomological Investigations. The chestnut blight has spread very rapidly during the past two years, and Mr. Gravatt predicts that 80 per cent of the trees within the Forest will be infected by 1925. If this prediction is correct it will be a severe blow to the Natural Bridge because 60 per cent by volume of the stand of merchantable material is chestnut.

Eight streams within the Natural Bridge Forest were stocked this spring with 21,000 rainbow trout fry which were received from the Bureau of Fisheries.

High Freight Finance: "I am not running my little sawmill at Brantley, Ala. now. Railroad's high freight close me down. In Nov. 1920, I ship 14,000 ft up in Pa. It sold for $420.00 Rail R. taken #371.81 for freight, Commission man, #35.00, and I got #13.19. I will never saw mill again unless rate get better." -- W.L.B.

DISTRICT 8 - ALASKA DISTRICT

Sales Opening Up: The Ketchikan Power Company sawmill at Ketchikan started operations April 18 in a very limited way. The Petersburg Lumber Company mill at Petersburg also started operations on the same date. There is estimated to be more than sufficient logs in the water to supply this year's demand.

More Pulp Timber: A preliminary investigation of the pulp timber lying at the head of Neets and Shrimp Bays has just been completed. This timber is tributary to Orchard Lake power. It will be included in an advertisement offering 500,000,000 feet B.M. pulp timber for sale.

Study Course: Deputy Supervisor Peterson on March 16, in his diary, states - "trying to finish Study Course. It is a hopeless task. There is so much other work to be done." Peterson's diary shows that he worked 291 hours during March. In taking care of his work he traveled 703 miles in Launch Ranger No 5.

Thorne Arm Pulp Area: B. F. Heintxleman is working on the Thorne Area of the Butler Timber Sale Application. G. H. Canfield of the Geological Survey, in charge of water power examinations, assisted by Mr. Gurrin, topographer, of the U. S. Land Office, and C. F. Groom, former ranger on the Whitman, are also at Thorne Arm making surveys of the water power. The two parties are being taken care of aboard the Launch Tahn. Arrangements have been made whereby both preliminary timber surveys and water power examinations are taken care of at the same time.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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Danger of Over-Selling Recreation

By W. H. Friedhoff, D-5

In developing recreation on the National Forests, there are, in my opinion, numerous possibilities of error. Among these are the following: Danger of overzealousness and pushing this activity to extremes. Exaggerating the importance of individual areas and overlooking entirely the public service feature which is really the principal factor of such development. Too much publicity for which we are not prepared on the ground. Anxiety on the part of the Supervisor for increased revenue from Special Use for which we are not yet prepared. This is illustrated by granting home site permits in any and every locality desired, regardless of the lack of any definite plan for the area. Putting S. U. on a real estate basis and trying out real estate agent's stuff in order to "sell" our product. Summer home sites are, theoretically at least, laid out to supply a public demand and not to increase Forest Service revenue. The minute you try to "sell" recreation sites the public shies off and demands all sorts of improvements--roads, water development, logs for cabins, etc. Where the sites sell themselves nothing of this sort is expected.

Where permittees lease lots and hold them indefinitely without improving, the Supervisor does not like to cancel the permits, thereby cutting off part of his revenue, especially where there are numerous other sites not yet leased. This, I believe, is a short-sighted policy which gives the permittee the impression that the rental we receive is all that we are really after. All permits on summer home sites should, in my opinion, be cancelled whenever the time limit expires without the required improvements being made, unless a valid excuse for an extension of time is given.

I have noticed throughout the District that wherever a great effort has been made to "push" the summer home business, and many concessions have been made to permittees in order to boost an area along, the permittees have been most backward in developments and have expected more from the Government and found more complaint with the general development than where the business has built itself up.

I believe we do better and give better satisfaction where we lay out our sites, let the public know that such sites are available at a certain rental and make no attempt whatever to "sell" or "push" these areas. The public are not "prospects" nor are we real estate agents, and it is not in the interest of the public service for us to develop commercial methods in handling public property.

Another thing in which I believe we are tending toward extremes is in competing or attempting to compete with other interests in giving to public or semi-public organizations, such as the Y. M. C. A., Y. W. C. A., Boy Scouts, etc., recreational areas which are especially choice sites, even going so far as to out-talk or out-bid private interests in order to induce such organizations to locate on our land. Our especially attractive recreation areas, while appearing unlimited in number to-day, may and will in a few years become scarce, and it is not necessary to try to "push" their development at present. They will all be gradually filled up and utilized without any artificial stimulant, and any methods of trying to induce organizations to patronize us by accepting the cream of our recreation areas for their playgrounds will simply result in cheapening our product.

I believe that where cities or counties are given recreation areas in the Forests it should be understood that the plans for improvement should be approved by the Supervisor before development is undertaken. Such a restriction would be in the interest of the people to be served, because there are few of our county organizations but what could profit by our experience in such matters.

It has been noted by many of us that the home site business has almost universally started and spread out from summer resorts and every recreation area should be studied with a view of the possibility or practicability of the location of a resort in connection with the home sites. Where new areas are opened I believe we are justified in making concessions to "commercial" permittees in order to start the area off right, as these resorts, properly conducted, are the life of any summer home colony and are almost a prerequisite to the special use business.

There is another point that I think should be impressed on all of our Supervisors, and that is the absolute necessity of having all of our possible or prospective home, resort and camp-ground sites studied and listed for future development. Such areas, especially where water is limited in quantity, should be examined during the dry seasons and a record of the available water should be kept. We then know what conditions we have to face when the time comes for laying out the area. The number of lots available, camp-ground areas, commercial sites and natural advantages, particularly fishing and hunting, could be noted after a brief reconnaissance; also accessibility and present use by campers.

Such things could be noted by the Rangers without going materially out of their way during the summer season, and reports submitted to the Supervisors in the fall.

Such data will be of great value to us several years hence when the need for opening up new areas develops, and it might even be desirable to get out a number of mimeographed forms on which the above data could be noted.

S. T. Dana Becomes Forest Commissioner of Maine

"Sam" has gone. After 14 years in the Forest Service he now returns to his native State as the head of the forest activities in Maine. With its enormous timber resources and large investments in the pulp and paper industry, whose very existence depends on a permanent supply of timber, Maine has never had, until Dana's appointment, a real technical forester in charge of its Forest Department. In securing his services the State of Maine is certainly the gainer and the Forest Service very much the loser. The best traditions of the Forest Service, its progressiveness, lack of bureaucracy, and cooperative spirit are typified in Sam, and we may well be proud that such a finished Forest Service product is now to make himself felt in State forest matters. It is needless to detail to members of the Forest Service the well-known brilliant career of Dana from the position of a Forest Assistant in 1907 to the Assistant Chief of the Branch of Research in 1920. We, his co-workers in the Branch of Research, will miss him; we do so already. There is a mental vacuum marking the spot in the old Atlantic Building whence his lucid ideas, vision, sympathy, and helpfulness percolated throughout the entire organization.

Sam once more confirms the well-established fact that there can be no good forester without broad vision and interest in human affairs in general. Without such vision and interests forestry is merely a trade and not a social service, and further, a "real" man always has deep and sympathetic understanding of his co-workers and is interested in their welfare. No man in the Service has worked harder and contributed more to the work of reclassification of positions and improvement of the work of the personnel. At a time when the need of increasing efficiency by the formulation of standards is much to the fore, we may point to Sam as evidence that there may be the highest efficiency without highly formalized standards, and real leadership along with our old-time democracy.--R. Z.

"THE FORWARD PASS"

By Fred Morrell

Last fall I attended a football game in company with two "old grads" who played on the Varsity eleven "in the good old days."

It was in the last quarter and the score was tied, but the home team was seemingly playing a losing game. They did not have "the men and brains" (to borrow Mr. Headley's expression), to stop the attacks of the other team. So with the ball well back in their own territory, the quarterback resorted to aerial football as a last means of getting down the field. The first attempt failed by a wide margin, and the team had to settle back on the defensive and try to stop the steady advance of their opponents. The "old grad" on my right spoke somewhat as follows: "Now what was the sense in doing that? If they would stick to old-fashioned football they'd have a chance to stand 'em off till the whistle blows and get away with a tie score." He on my left stood up and cheered the man who missed the ball and wished him better luck next time.

Again the home team had the ball and as the signal was given, the team spread out for the pass. Once more from the grad on my right: "There's that bone-headed quarter trying the pass again. He ought to be captain of a marble team." The play failed, and once more the man on my left cheered.

Finally, there came another chance and the signal was for another pass. Once more the critic swore. But this time, the lad down the field connected with the ball and got away for a touchdown that won the game. The gentleman on my right threw his hat in the air and pounded us on the backs: "Some play; some football, some team we've got," he said. But the game was done, and the team didn't need his cheers.

In these days in the Forest Service, we may sometimes have to try a forward pass. To a lot of us it looks like the enemy has had the ball in our territory pretty constantly, and we have had a pretty hard time to make much gain against the pressure of jobs that are to be done. Possibly the signals for a forward pass or two have already been called. The players may fail. They are quite likely to, if there are too many rooters of the kind who sat at my right. Maybe the wrong signals are being given, but let us take them when they come and give the fellow who calls them a chance, even if we fail to complete the play. That is the kind of support that will enable us all to make progress.

We Never Sleep

A rather interesting illustration of the manner in which Uncle Sam keeps on the trail of wrongdoers and violators of his laws is furnished by a statement from the United States Attorney General's office closing a trespass case against an individual who in October of 1911 allowed 500 head of sheep to trespass on a closed area in the Minidoka Forest.

Trespass proceedings were instituted in February, 1912, the case came into court and judgment was rendered against the individual in the sum of $20.00 for the value of the forage consumed. The party, however, was insolvent, and there was no property which the United States could levy upon to satisfy the judgment. Recently, however, the United States District Attorney managed to get a settlement out of the trespasser for the full amount of the judgment, $20.00, plus interest amounting to $12.00, or a total of $32.00 for a trespass committed almost ten years ago.--Will C. Barnes.

Federal Responsibility for the 1918 Minnesota Fires

By L. S. Murphy, Washington

Recently a letter was received by the Secretary from the Congressman representing the district which was swept by the disastrous Minnesota forest fire of October 12, 1918, apprising him that the "United States Government was responsible for the origin of the fire, and, consequently, must pay the damages." Putting two and two together, it was assumed since there were National Forests in Minnesota that this indictment was against the Forest Service. But the National Forests were innocent.

There's the Federal Railroad Administration and in its heyday it, too, laid some claim to greatness. Alas, that fateful October 12, 1918, occurred in this heyday period when Uncle was holding the sack for the railroads. Let the National Underwriter for September 23, 1920, tell the rest of the story.

"One of the greatest legal victories ever obtained by fire insurance companies is found in two decisions just handed down by Minnesota courts and involving an aggregate fire loss liability variously estimated at from $14,000,000 to $16,000,000. The decisions hold the Great Northern Railroad Company liable for starting the so-called Cloquet fire in October, 1918, when the greater part of Cloquet, its vast lumber plants, and miles of neighboring territory were destroyed; and the Soo railroad guilty of originating the so-called Moose Lake fire. Both of these fires were part of the great northern Minnesota forest conflagration, and locomotive sparks were found in each case to be the original fire causes.

"On Sept. 17 the Minnesota supreme court filed the decision in the case [Anderson vs. Minneapolis, St. Paul and Sault Ste. Marie Ry. Co. et al, No. 21855 (?)] which involved liability for the Moose Lake district fire. * * * The Cloquet case was decided in district court at Duluth. * * * Where insurance is paid, in the final settlement the insurance companies will be reimbursed to such amounts as they have paid out, and the balance will go to the property owners.

"As both railroads involved were under lease and control of the United States government at the time of the northern Minnesota conflagration, with Walker D. Hines in charge as director general of railroads, the eventual liability adjustment involving its millions of dollars will have to be settled by the federal government and does not rest against the two railroad corporations.

"The decisions are considered of tremendous importance not merely because of the great amount of liability involved, but in definitely laying down the rule of railroad liability where fires are started by locomotive sparks.

"The Moose Lake district fire involves about 1,600 different claimants. As to the possibility of the fire * * * being of origin other than a locomotive spark the court says, * * * *

"'There was a drought in northern Minnesota throughout the summer and fall of 1918. It was protracted and severe. There was a high wind on October 12. * * * The fire or fires * * * had been burning a long time. The defendant [railroad company] was bound to know that the greater the drought the greater the danger of the spread of fire. * * *

"'Neither the drought nor the wind could have destroyed plaintiff's property without the fire. * * * Hence if it can be said that an extraordinary wind coupled with an unusual drought were proximate causes of the injury, still the fire was a natural concurring cause without which there would have been no damage to plaintiff, and defendant is liable under the established rules of law.'"

As to the Cloquet fire the National Underwriter points out that there were 278 plaintiffs united in the suit against the Great Northern Railroad and that five district judges heard the case, rendering a decision in favor of the plaintiffs. The court found that the defendant railroad permitted dry grass and other combustible material, including a large quantity of bark, to accumulate and remain along its right of way and that it operated without employing patrolmen whose duty it should be to watch for and extinguish fires; that the fire originated on the company's right of way in this vicinity and swept along a path, varying in width from one to four miles, entering Cloquet, 13 miles distant, and destroying it, spending itself in the village of Scanlon.

The Railroad Administration, it should be noted, has and will appeal all cases and carry them to the U. S. Supreme Court, if necessary, and only when that court has rendered its verdict will federal responsibility be acknowledged.

* * * *

I had seen how, on the [illegible] an inch a year,
And it took a dozen cac[illegible] produce a yearling steer;
With a cactus to an acre, and ten acres to a chain,
Three cows to every yearling, and an inch a year of rain.

This, by ratio and proportion - say - as nothing is to one,
Gave a pound per inch of cactus, and ten yearlings to a ton;
Thus, on a cactus acre basis, for a given term of years,
We could check the carrying capacity by the sales of steers.

With this basis for appraisal, the value then was told
By the price per head for yearlings, and the average number sold;
Which, figured by equation,--say 100 equals C,
Minus A and B for handicaps, would give the grazing fee.

But since I've seen the Prescott, my dope is wrong, I've found,
As I failed to class as forage, the roots down in the ground;
For on the Prescott ranges the hungry bovine brutes
Eat the cactus to the gravel, and are pawing for the roots!

And the cattle are much smaller, so my dope on weights won't check,
And they always ship their yearlings in cars and double deck;
And they say that west of Prescott, near the Diamond-and-a-Half,
A cowboy saw a rabbit and thought it was a calf.

The inspector said by checking weights on shipments he had found,
That their average run of yearlings weighed about a hundred-pound;
So I'm right back where I started, but I haven't quite lost hope,
Though I have to start all over on this Range Appraisal Dope.

J. H. Sizer--Tonto.

Homesick for the West

By I. F. Eldredge, Washington

I am homesick for the West! When I was a young man in the Service I spent three years on the Coast prowling among strange and little known places on the High Sierras, looking for the Lord knows what, and turning out timber sale reports, working plans, management policies, trespass reports, or anything else that struck my youthful fancy as appropriate or curious. It has been nearly fifteen years since I last visited the Coast, but I can still recall how the tar weed smells under the sugar pines; the song of the meadow larks in early spring in the San Joaquin valley, and Old Man Shinn's blue horse that had to be approached with tact on a frosty morning.

What a brave array of old timers comes before my mind's eye! What a rattling of spurs on barroom floors, creaking of saddle leather, pleasant and piquant odor of sweating horse--sagebrush and dust! What honest talk, devoid of all reference to work plans, the redemption of responsibilities, and the like, but concerned with simpler and grander things like the recent fracas at Stephen's Road House on the old Yosemite Stage Road and speculation as to the probable matrimonial intention of the latest schoolmarm at The Flats.

And the Valley towns and San Francisco! Yes, Sir, once a year at least! No prohibition those days either, no chaperones, no nothing--just youth, health, and a pocket full of hot money--sweet memories--I sigh and pass on.

How I would love to go back over the old fields wherein I romped as a colt; to see some of the sales I made, some of the stands I marked for cutting, some of the trails and boundary lines I surveyed. I might even forget to keep up my grousing for reclassification and more pay. I crave to see Noddin and Malcolm McLeod on the Sierras, Klien and Clark on the Sequoia, Jacinto Reyes on the Santa Barbara, Old Man Shinn, Red Headed Hogue, Bill Durbin and a host of other old timers and shake hands and ask them what's what, and all that.

Homesick for the West (Cont.)

And I would seek a deserted Supervisor's office at the quiet hour of dusk and reverently and with loving hands disinter from the sepulcher of the closed files some long-buried first-born infant of my brain, some little working plan, and gaze tenderly upon its white form, stark of the cloth of authority, and innocent of the thumb prints of a Supervisor! But shucks! Away tears and let me finish.

What I started out to say is this: Isn't there some way that an Assistant District Forester can get a chance to see what people are doing in his line in other districts? The exchange of ideas, the study of methods, and the freshening and strengthening of that old esprit de corps would justify the expense three times over. I guarantee that District 7 can make the trip worth while to a westerner; what we can't show we will tell you about, and, personally, I'll volunteer to endure the rigors, droughts, and the dangers of a western tour for the sake of science most any time between fire seasons.

Lost--An Opportunity to Make Good

Boss reported fire bearing 310 - 12 miles at 1:10 P. M.	
Looked for Map. Found it in coat pocket	3 min.
Azimuth circle missing. Phoned boss for details	2 "
Boss said line passing through Sec. 10, T. 15 N., R. 31 W., Couldn't find right section,	
Phoned boss	1 "
Numbered sections right to left	1 "
Phoned boss to see if water on high line trail	1 "
Fried bacon and potatoes, got bucket of water, ate dinner	25 "
Couldn't find pony for a long time; then couldn't catch him; back for pan of oats, caught pony in fence corner	20 "
Fed pony oats, saddled and watered	3 "
Got picket rope from upstairs	1 "
Sacked oats for trip	2 "
Picked up smokechaser outfit, couldn't find compass and axestone	2 "
Boss called to see if I had gone	1 "
Hustled around, rolled up blanket; got matches	1 "
Put outfit on horse and started	1 "
Missed ridge trail. Had to go back half mile	10 "
On top ridge 5:00 P.M. Tried to find out how to get in line with azimuth reading from lookout. My compass has W on E side. Something wrong. Figuring things out	5 "

7:00 P. M. Guessed I was in line with lookout. Looked all around. Couldn't see anything.
Went back to camp. Reported no fire to boss.
Two days later boss tells me big fire just over ridge from where I was. Must have been fire I was looking for. Didn't know that other high point was on bearing he phoned me. Couldn't tell from this compass. It doesn't read right.
Boss says fire burnin' fine. Cost anyway $2,000.
Guess better be careful next time.

Time - 69 Min.
Unnecessary - ?

Question: How much is this fellow worth?--H. L. Baker, D-1 Fire Journal.

* * * * *

Wise Beyond His Years

Forest officer, lecturing to school children: "Now, can anyone tell me what Conservation means?"
Small Boy: "Yes, sir--A lot of talk."

Ups and Downs of Fiscal Regulations

By Roy Headley

Out of seven specific requests for liberalization of the fiscal regulations the Comptroller of the Treasury has turned down five and approved two. One of the two approved changes was to omit the rule that conductor's checks must be submitted as subvouchers when cash is paid for parlor car seats or Pullman berths; the other gives authority to furnish board to [illegible] who render free service of any kind to the Department as is now permissible in the case of persons fighting fire free of charge.

The desired changes which were disapproved by the Comptroller were as follows:

A revision of the laundry system permitting laundry to be done after the traveler reaches home and otherwise liberalizing the regulation.

Authorizing the use of taxicabs subject only to administrative disapproval.

Authorizing the repair of motor equipment owned by employees when the injury was due to exceptional strain on unusual official work--as is now possible under an act applicable to the Forest Service only.

Authorizing an employee who is traveling with his wife or family to claim reimbursement for hotel and Pullman berth expenses in amounts equivalent to what would have been required if he had been traveling alone.

Authorizing employees traveling on a per diem to use a street car at Government expense when such transportation is necessary between the place of business and the hotel. Employees traveling on actual expenses may do so and it was desired to extend this to employees traveling on a per diem.

In disapproving these changes in the regulations of the Department of Agriculture, the Comptroller of the Treasury expressed a good deal of lack of confidence in the administrative authorities to control the use of Government funds in a proper manner.

The seven points had to be submitted to the Comptroller because the desired changes were in conflict with previous Comptroller's decisions.

A revised edition of those fiscal regulations which pertain to travel is about ready to be printed. It will present the regulations in a much simplified form and will carry certain changes which it is expected will be welcome to field men.

If the President signs the Budget Bill the present Comptroller of the Treasury and the Auditor for the State and other departments will be superseded on July 1 by the new General Accounting Office under the new Comptroller General of the United States. A complete revision of accounting systems and fiscal control will be likely to occur as a result of this reorganization.

Advertised By Our Loving Friends

"Ely, Minnesota, Gateway to the Superior National Forest in The Playground of a Nation," is the title of a 20-page illustrated booklet just issued by the Ely Commercial Club in cooperation with officers of the Superior National Forest.

Here is a case where lack of Service funds did not hinder effective advertising of one of our popular Forest vacation lands. Such things, however, do not just happen. Cooperation of this character takes lots of hard work, and some mighty good arguments to get the other fellow to foot all the bills. But it can be done.

All of which leads one to wonder how long it will be before the Service fully wakes up to the fact that through its recreational resources it has a wonderful opportunity to "sell" the really big things in forestry. You may not be able to interest the man on the street in the Snell bill or reforestation or fire prevention offhand, but there is a 50-50 chance to get at him through motoring, camping, fishing and like outdoor life attractions in which practically everyone is interested. Get him on your side and the rest is easy.

Also, it doesn't make much difference how good a stock of trade you have if you don't let people know about it. The man who doesn't realize the importance and far-reaching effect of publicity and advertising these days, is both behind the times and on the road to failure. The world is full of such shining examples.--WH.

Dedication of Memorial Tablet

The dedication of the memorial tablet to the Forest Service men who gave their lives for the nation in the World War took place at the New National Museum, Washington, on June 10. This memorial, which bears the names of the nineteen men shown on the cover page of the May 30 Service Bulletin, is an example of Italian Renaissance, the style being that of old tablets seen in Italian cathedrals. It is believed to be the only work of its kind in America. The material is Sienna marble from a quarry near Florence, Italy. The lettering is French Old Style, deeply incised, filled with a hard black cement containing golden flecks. The thanks of the Service is due to the Memorial Committee, consisting of R. V. Reynolds (Chairman), Paul D. Kelleter, and John M. Witherow, for their work in connection with this most beautiful and appropriate tribute to our boys who gave their lives for liberty and justice. The program of the dedication services follows:

PROGRAM

March--With the Colors . . . . Penella

Entry of Veterans of Three Wars

Largo . . . . Handel

Introductory Remarks
Mr. Roy Headley

Honors to Forest Service Soldiers and to a Citizen-Soldier, Rudolph Mellenthin. Conducted with projected pictures
Mr. Edward Burkholder

Recessional . . . . De Koven

Address of Presentation
Mr. Herbert A. Smith

The tablet will be unveiled at the conclusion of this address

Address of Acceptance

Lieut. Col. William B. Greeley

20th Engineers (Forestry)

(Forester and Chief, Forest Service, U. S. Department of Agriculture)

At the termination of Col. Greeley's address, the audience is requested to stand at attention and repeat after him the following:

Pledge to the Flag

"I pledge allegiance to my Flag,
And the country for which it stands:
One Nation, indivisible,
With Liberty and Justice for all."

The Star Spangled Banner . . . . Key

Note.---Through the courtesy of the Commanding Officer, Fort Myer, Virginia, the music on this occasion is rendered by the Band of the Third United States Cavalry, led by Staff Sergeant David R. Wellison.

The memorial tablet will be prominently placed in the main hallway of the 7th floor of the Atlantic Building.

Presentation of Memorial
By Mr. Herbert A. Smith

Colonel Greeley, to me it is given, in this moving hour, to speak for a moment on behalf of those who have wished that the memory of these men and of what they did shall not be lost.

Early in the war there was hung above the door of the Forest Service, as above innumerable other doors up and down the land, a flag of red and white, bearing blue stars. The lines of blue stars lengthened; and then there came a day when one turned to gold. In no long time others were added, until they numbered five.

The names of those for whom the gold stars shone were passed from mouth to mouth; but in the midst of war's preparation and the hurrying of great events mere memory offered a record too feeble and imperfect. Therefore we inscribed the names on an honor roll, and proudly placed it where all might see and read.

The war came to its righteous and inevitable end; our men came home; and there was no longer need to hold a place on the roll of honor for new names. Then it became our privilege to take thought for the preparation of a memorial more enduring. All had the same desire--that our tribute should be wrought with a design perfect in dignity and significance, and an execution without flaw or blemish.

This, we believe, has measurably been accomplished. The credit belongs to those whose solicitous care it was that our tribute should be of the best; and it is fitting that they here be publicly named: Robert VanRensselaer Reynolds, Paul Delmar Kelleter, and John McClean Witherow.

Meanwhile there came spontaneously from all our people contributions toward the cost of the memorial. From cabins in the distant wilderness, and from the offices in busy cities; from the guards, and rangers, and clerks of all grades, equally with those in positions of greater authority, the fund was swelled. There was none too far away, and none too straitened by the pressure of urgent demands, to participate in the tribute which we make today. It comes not from a few who happened to be fortunately circumstanced; nor from those to whom these men were particularly endeared through personal associations; but from the rank and file of the Forest Service as a whole.

It is for all of these whose privilege it now is formally to offer this our memorial that I am commissioned to speak. We offer it--I dare not say we give it; for in the presence of the thought of what these men have given, how could we venture to appropriate the word to the fulfillment of our desires? To them and to you we offer a commemoration of those whose gift and sacrifice has been perfected.

They were our associates in the years that have passed and return not again. Our associates, we are glad to remember, in a common and great cause. To some of us, as to yourself, it was given to be also their close associates in a still greater cause, and to share with them the toils, the hardships, and the perils of service overseas. In that cause also we would fain think ourselves in some small degree participants, for we tried to assume some portion of the burden which the whole nation bore. With all humility, we too would ask some share of comradeship.

Even more,--we would have them our associates still; their names and records living and familiar in our midst. We seek the rearing of this tablet not in the thought that we honor those whom it designates, but rather in the thought that by its record we ourselves are honored. In silent reverence the men and women of the Forest Service wherever they are now employed, have halted their daily tasks to be mindful of what we now do. In token that the memory of the men whom the war took from us shall endure, as do their deeds, I now unveil their shining names.

Acceptance of Memorial
By Col. W. B. Greeley

On an occasion like this one's mind easily reverts to the stirring times in which these our fellow members lost their lives. I recall well talking with Bert Williams but two weeks before he lost his life, at the time when he had received his assignment to active work at the front. I recall in that conversation nothing so clearly as his exultation that the opportunity had come to him to take his place on the firing line. I recall very well meeting the 6th Battalion of the 20th Engineers, which lost 90 men on the Tuscania, upon its arrival in France. Nothing impressed me so much in the account of that disaster as I had it from the lips of many of those men, as the spirit with which those boys, after the ship had been torpedoed--not knowing what fate was in store for them in the immediate future--remained in line under the perfect control of their officers, and passed the long hours while the ship was settling in singing the songs which they had learned in the Army camps.

The Forest Service takes pride in accepting this beautiful memorial, with grateful recognition of the thought which has prompted it and of the part which men and women in all ranks of the Service have had in perpetuating the memory of our fellow-workers who gave their all to their country. With our sorrow for our absent comrades whose names are written here, we feel a reverent pride in that the shining record of the nation's sacrifices for the cause of world-wide freedom includes so many from our own number. At this hour, the men and women in the Forest Service, wherever they are at work, will stand for a moment to do homage to these lives which have been taken from us. We will never forget what these men have done. We will never forget the lesson they have given us.

This simple tablet stands as a symbol of acceptance of the call to duty and of its sacrifices. In giving it the cherished place which it will hold as long as the Forest Service shall endure, we will not only keep green the memory of the men whose names are engraved upon it and their full measure of devotion. We will honor no less, by this symbol, the zeal with which hundreds of their fellows accepted the call to duty brought by the great war, each as it came to him. We will honor all of our members who served under the flag. We will honor in the same measure the men who, notwithstanding their eager desire to join the colors, stayed upon their appointed tasks because there was the place where their service could most effectively be given. We will honor the devoted women in the Forest Service who labored so faithfully that the men overseas and in the camps might not lack in necessities and comfort.

As Lincoln said on the battlefield of Gettysburg, no word of ours or memorial we may erect can add luster to the deeds of these old comrades of ours. It is rather for us who live to dedicate ourselves to-day to fidelity in public service, patterned in some small measure after their singleness of purpose and their supreme sacrifice. Let us place this tablet where it will stand before our eyes as a perpetual call to the spirit of service in the work given us to do, to the spirit of which these men have set us so shining an example. Thereby will this memorial in stone become a living memorial in our lines and deeds.

As an act of dedication, simple indeed but one that will never lose its meaning, I ask you all to stand and repeat with me the Pledge to the Flag, which will be followed by the National Anthem.

WASHINGTON NOTES

Recreation Publicity: The following articles of interest on the outdoor life attractions of the National Forests have been recently noted:

> Our National Vacation Land is Beckoning. By R. P. Crawford. 2 pages, illustrated with seven photographs. The Dearborn Independent, June 4.
>
> Forest Service Tales. By A Ranger's Wife. Three pages illustrated with five photographs. Outers'-Recreation, April.
>
> Did You Ever Tour the National Forests? By Will C. Barnes. Two pages illustrated with five photographs. Motor Life, June.

The Question of Grazing Fees is apparently a live matter on other forest ranges than those in the United States.

A recent statement from the American Consul at Cambellton, N. B., has reached the Service through the Department of State, to the effect that on certain pastures on Dominion Forest Reserves, which are fenced at the expense of the Government, the charge hitherto made of 25¢ per head per month for cattle, or $1.50 per head for the season, has been increased to 50¢ per head per month for cattle, or $3.00 per head per season. The season is not given, but it is probable that it does not cover more than seven months at the outside.--W. C. B.

DISTRICT 1 - NORTHERN DISTRICT

Lumber Census: Census figures showing the lumber out for Idaho and Montana in 1920 have recently been compiled by the office of Forest Products. These figures are very interesting, inasmuch as the cut in these two States exceeded any previous year, including 1916, when building conditions were on such a scale as to call for a record cut. A comparison of the cuts in three years is as follows:

	Idaho	Montana
1916	850 million bd. ft.	380 million bd. ft.
1918	802 " " "	340 " " "
1920	970 " " "	410 " " "

Butte Scouts Cooperate: The Boy Scouts of Butte, Montana, have taken an active part in the Forest Protection Week program. Under the direction of Supervisor Clark of the Deerlodge, Scouts from different schools in the city delivered addresses before their schoolmates. A large edition of auto radiator tags was printed and was turned over to the Scout organization for distribution.

Lewis and Clark Pass: District Engineer F. E. Thieme and Asst. Dist. Engineer H. A. Calkins recently made an inspection trip to the Lewis and Clark Pass, with a view of laying plans for the improvement of the present road across the Divide. It is interesting to note that this is the Pass used by Captain Lewis in crossing the Continental Divide from the headwators of the Blackfoot River to the Dearborn River on his return from the Pacific Coast in 1805.

Fire Map of Kootenai: Triangulation work on the Kootenai Forest will soon be completed by Harold Townsend and a small crew of surveyors from the Office of Engineering. When this work is finished, the data will be used in the preparation of a fire map for the Forest, which has been badly needed for several years.

A Cooperative Agreement between the Forest Service and the Montana Fish and Game Commission has recently been signed whereby Rangers will be appointed Deputy State Game Wardens.

Forest Officers and Families in Pueblo Flood Safe: The floods which occurred, following cloudbursts, Friday, June 3, disarranged our plans for the present and caused a number of changes in travel schedule. District Engineer Mendenhall was held up by the flood between Fort Collins and Denver, but succeeded in getting home after more than 24 hours on the road, by building a bridge across a washout.

The headquarters of the San Isabel was completely isolated from the world for a time along with the rest of Pueblo. Since we were unable to get into communication with Supervisor Hamel, or get any news as to what had happened to him or others of his office personnel, a trip of investigation was made to Pueblo. It was found that both Supervisor Hamel and Deputy Supervisor Doering had had rather narrow escapes from the flood in attempting to reach their families, since they were both in the field at the time the flood occurred. Miss Kendig, clerk in the Supervisor's office, was marooned on the third floor of the Y.W.C.A. in Pueblo and felt fortunate to escape with her life. Conditions have been very serious indeed in Pueblo and there is still danger of epidemics of various diseases. The Supervisor and Deputy Supervisor are planning to get their families out of town and into the mountains as soon as transportation is available.

The summer plans for recreation development of the San Isabel are, of course, pretty well shot to pieces so far as Pueblo's active interest and cooperation are concerned. At the same time, it seems probable that tourists will come to the city in great numbers to see what happened during the flood, and it is quite probable that the San Isabel will have to entertain a great many of these tourists.

Associate Forester Sherman was a welcome visitor to the District Office the latter part of the week. This is the first visit of Mr. Sherman to the District since before the war and we are all glad to get acquainted with him again.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Forest Protection Week has received wide recognition throughout the District. The number of newspaper clippings coming in is more than double the usual amount, and practically all items are on Forest Protection. Some 40,000 sheets of literature were sent out to Forest officers, newspapers, commercial associations, county agents, Rotary, Lions, Kiwanis and other clubs. Boy Scouts, principals of schools, women's clubs, colleges, stock and game associations and to numerous prominent individuals. The local papers, the Rocky Mountain News, the Denver Times, and the Denver Post all published editorials and cartoons besides using freely of the other material.

Planting on the Pike Forest: The Pike planting operations are now in progress under the direction of Forest Examiner E. S. Keithley, who has had charge of this work on the Forest for the past nine years. Ranger Janouch of the Nebraska Forest, has been detailed to assist as a crew foreman.

The camp is located at an elevation of about 10,000 feet and shortly after the tents were set up, in the middle of April, a four-foot snowstorm occurred which caused many of them to collapse and delayed the opening of the work for about two weeks.

Colorado Rangers Cooperate in Fire Game: There has recently been organized in Colorado a State constabulary force known as the Colorado Rangers, with headquarters in Denver and various platoon and troop headquarters throughout the State, from which more or less regular patrols are maintained by Rangers mounted on motorcycles. The chief purpose of the organization is to assist local police officers in maintaining law and order, and advantage has been taken of the character of the organization of this body to establish cooperative relations looking to their assisting us in fire suppression and law enforcement.

Trees of Remembrance: Thirty trees were planted at the Monument Nursery on Sunday, May 29, each one dedicated to the memory of a member of the Forest Service in District 2 who died while officially connected with the Service. This total of thirty includes four men who died while in the military service during the recent war.

Game Licenses Free to Forest Officers: State Game and Fish Commissioner R. G. Parvin has issued free fish and game licenses to practically all of the permanent force in Colorado, including a number of members of the District office. Similar licenses are being issued by the State Game and Fish Department of Wyoming to Wyoming Forest officers.

Grazers Defer Payment: From 80 to 90 per cent of the grazing permittees of District 2 have taken advantage of the deferred grazing fee payment provision. This is shown by the fact that we have received about $49,000 in grazing fees for the period January 1 to May 31 as against nearly $396,000 for the same period a year ago.

District 2 (Cont.)

Cochetopa Headquarters Moved: The headquarters of the Cochetopa Forest have been moved from Saguache to Salida, Colorado.

Bird Study Course: Mr. Keplinger, in charge of the Educational Courses, has arranged with Mr. Figgins of the Colorado State Museum to furnish material for a course in bird study. The Museum will furnish specimens of about 30 of the more common birds of Colorado, also description of each bird and a discussion of its natural history. There will be one lesson on each bird. The specimens will be returned, but the Ranger will keep the notes on the birds for his permanent use.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Foresight: A farmer from the plains was in this neighborhood the other day trying to buy a piece of well-wooded land, which would insure him against a shortage of stove wood in the future. He claims that all of the wood on the National Forest will be gone in a short time and he wants to be sure that he will have enough to keep the home fires burning.

Forest Protection Week Exhibit: The District Office has an exhibit in a local store window in keeping with Forest Protection Week. Two of the yellow pine models used in last year's fair work occupy the center of the window, while a decorative frieze of enlarged photographs, taken in the District, fills in the background. Appropriate signs and titles complete the exhibit.

The Salt River-Pleasant Valley Road on the Tonto National Forest has been completed. This road was commenced in 1915 and after constructing $3\frac{1}{2}$ miles the project had to be shut down in 1917 on account of the war. Work was resumed in 1919 and continued up to its completion recently. The cost was in the neighborhood of $189,000 of which amount Gila County put up one-third. This road is 23 miles long and is 12 feet wide with substantial drainage structures, and opens up a desirable recreational area, affords access to valuable asbestos mines and a large agricultural community at Pleasant Valley.

State Insurance Department Bulletin: In cooperation with the District Office, the New Mexico Insurance Department has published a Forest Protection Week edition of the Bulletin of this Department. The material for the bulletin was prepared in this office and 1,800 copies are being mailed from here, principally to New Mexico school teachers.

A New Activity: The abandoned Fry Canyon Nursery on the Crook is again flourishing--but, instead of growing trees, we are growing brides and bridegrooms and, perhaps, later, little brides and bridegrooms. The second wedding this spring has taken place at this beautiful spot in the pines. The Crook accommodates the public in most any line.

New Mexico's New Fire Law to be Tested: "The new State fire law will be tried out for the first time on next Monday, May 23. Mr. Dwire has completed arrangements for a mock trial to be given by the Taos High School. The two defendants are charged with violating Section 2 of the State Fire Act. The State is represented by Arthur Alderette, while the defendants have four attorneys and attorneyettes. A judge, clerk, sheriff, and stenographer have been selected and a jury will be empaneled at the trial; each side will have five witnesses.

"Sections 1, 2, 3 and 4 will be quoted by the judge in her instructions to the jury. The case is called for 2 P. M. The entire public school will be present and the town is invited. Here's hoping for a conviction."

Prescott Rangers Deplete Supply of Teachers: The essay contest among the high schools of the county incidental to Forest Protection Week, is bringing forth a great deal of interest in fire protection. The high school and grammer school producing the winning essay is to receive a large U. S. Flag. The Rangers are urged to get in touch with school teachers on their districts in connection with publicity, but the County Superintendent of Schools states this is rather disastrous to the morale of the teaching force. (Within the past six months two teachers have ceased teaching to become managers of Ranger Stations.)

Manzano Giant Wrecks Big Mill: Five feet through, 14 feet long, all pure yellow pine, and from the Manzano, they say. They managed to haze it clear to Albuquerque from the Zunis and the slumbering resentment of the big log over being yanked from its forest home to do duty as houses, chicken pens, etc., awoke when it was going up the incline to the mill. Control of the big fellow was lost near the top and when he stopped going the timbers of the conveyor were reduced to kindling wood, a building was wrecked, and a hole big enough to hide half a dozen men dug in the local scenery.

Good Publicity Medium: An attractive booklet gotten out by the Alamogordo Chamber of Commerce extolling the superiorities of that town over other spots on the earth, contains a well-written description of the Lincoln National Forest. With our limited funds for printed publicity, no opportunity should be overlooked to get in on publications of this nature put out by various localities.

Boy Scout Pilgrimage to Taos: "Deputy Forest Supervisor Dwire has received a letter from John W. Baughman of Liberal, Kansas stating that he expects to visit Taos June 16 to 19 with about forty Boy Scouts, and asks Mr. Dwire to give the Scouts camp fire lectures on forest fires and out-of-door life. Mr. Baughman is furnishing the boy scouts this trip to Taos at his own expense. The trip will be made with Rio speed wagons and touring cars."

Details of Catalina Fire: The Catalina fire which occurred on April 27 covered between 4,500 and 5,000 acres, including about one section in the yellow pine type. In addition to the regular force 255 men were employed as fire fighters, they having been transported by automobile from Tucson, Florence and nearby settlements.

The total cost of combating the fire was approximately $9,000. This was the most serious fire occurring in the Catalina Mountains since 1910, when practically the entire timbered area was burned over. The newly constructed soldier camp road was one of the main factors in controlling this fire.

One Mess of Trout--$110: On May 27, Deputy Game Warden Hames arrested one George Frane for beating the starting gong on the fishing season. The Pecos on the Santa Fe was the scene of the arrest, and Ranger Johnson says a gun play was necessary to keep the fisherman from disposing of his evidence when caught. The Justice of the Peace at Pecos town levied the fat little total of $110 fine and costs for the privilege of possessing a mess of trout before the season.

Aerial Patrol in District: Aerial forest fire patrol over the Coronado from the Army base at Nogales started Wednesday morning, May 25. A daily trip north over the Huachucas, Whetstone, and Catalinas will be made and after a noon rest at Tucson the return flight taken over the Santa Ritas. Radio communication will be maintained by the plane throughout its flight with Tucson by means of a station to be established by the Army at the Tucson field. The air cooperation was obtained by the Tucson Chamber of Commerce and will be maintained through cooperative agreement between the Forest Service and the Chamber of Commerce on one side and the Army on the other.

Talks at Las Cruces: Grazing Examiner Nelson of the Jornado Range Reserve gave an illustrated talk to the Agricultural Club of the New Mexico Agricultural College at Las Cruces on May 18, dealing principally with the work of the Jornado Reserve. On May 24, Mr. Nelson also spoke to 225 high school students at the Star Theater on the subject of National Forests, stressing forest fire prevention.

Big Fire Crosses Mexican Line: A fire that has been watched by Coronado Forest officers for some days burning in Sonora in Old Mexico, crossed the line into the Forest, driven by high winds, on May 30, according to a wire received from Tucson. One hundred men are on the line fighting the flames and details of infantry and cavalry from Nogales and Huachuca are being furnished to-day by Army officials to augment the fighters. Mr. S. H. Busch has gone to Nogales to act as special disbursing agent.

"The Best Photographs from the Field in Some Time": This comment on a group of prints just received from Washington. They are from negatives taken by M.W. Talbot and represent a selection from a number of photographs which he took during the last field season. A net gain to the District photograph collection of 50 prints results.

Wanted: A new name to replace "Picnic Grounds" or "Camp Grounds." "Picnic Grounds" is too trivial. "Camp Ground" suggests the familiar municipal camp ground with its tin cans and univoried Ford hoboes. "Forest Park" is the nearest I can come to it--but that may be too pretentious, or it may conflict with the National Park idea. Webster defines a park as "an area, generally large and enclosed, set apart for ornament or recreation." It seems to me that our recreation areas meet this definition--e. g., "San Lorenzo Forest Park"--and has more dignity and weight than "Picnic Ground" and less objectionable connection with "Camp Ground."

Any suggestions from the field?

Another Pop Bottle Fire: A full bottle (ante-prohibition) is harmless. An empty bottle is a fire menace: Witness, Class B fire on Picuris district May 12, caused by concentration of sun's rays through empty glass bottles.--Santa Fe.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Game Trespass Case Settled: Information has just been received that five defendants who committed a game trespass upon the Grand Canyon National Game Preserve (Kaibab N. F.) in September, 1917, in preference to going to Prescott to a stand trial have each tendered $50 in settlement. This terminates a case which has been pending for over three and one-half years.

Cottonwood Nursery Abandoned: Messrs. Baker, Korstian, Fetherolf and Littlefield have returned from their trip to the Cottonwood Nursery. They made a final shipment of 40,000 Engelmann spruce trees to Colorado for planting in District 2. The nursery will be abandoned from now on and turned over to the Wasatch Forest for a recreation center. The Cottonwood Nursery is the oldest nursery in the District and was established in 1906. During all this period of years it has been in charge of Mr. N. J. Fetherolf. The nursery has produced approximately 5,000,000 seedlings for planting in this District. The largest number ever turned out in one year was 800,000. Planting is being discontinued in this District because with the limited appropriations which are given for this work there is much more need of using them in other parts of the country where there are tremendous burned over areas and tree growth is very much more rapid than in the Intermountain region. For this reason all our nurseries have been abandoned, the Cottonwood being the last to go.

Fire Prevention Talk a Strong Appeal: Yesterday District Forester Rutledge gave a talk at the luncheon of the Kiwanis Club on Fire Prevention. He outlined some of his personal experiences in fighting fire and pictured very strikingly the results of serious forest fires. He made one of the strongest appeals for fire prevention and care with fire in the woods which has been made in many a day. The effect on his listeners was very apparent and the other Service fellows who were there feel sure that an immense amount of good was done by this talk.

A Bit of "Regular" Fire Prevention: As a part of a lot of other good work in connection with Forest Protection Week, Supervisor Campbell of the Boise induced some of the city churches to include material on forest fire prevention in their Sunday bulletins of May 22. The following appeared in one of these church bulletins:

"LET US PROTECT OUR FORESTS. So say the President of our land and the Governor of the State in special proclamation. They have appointed the week May 22-28 as "Forest Protection Week." Here are certain directions for the guidance of all people. 'Leave a clean camp and a dead fire.' 'Don't hack and blaze unnecessarily around your camp.' 'Dig a trench around your camp fire down to mineral soil.'

"To the foregoing we add yet another, viz. Do not smoke either pipe or cigar or cigarette within a hundred miles of a tree or human being. By observing this last rule millions of dollars will be saved every year and humanity will be cleaner and the air purer."

Park Started for Huntsville: The people of Huntsville have started to make the square there into a park and as a first step in this direction they have planted 1,000 blue spruce trees which they secured from the Cottonwood Nursery of the Forest Service.

U. S. Weather Bureau Gives Splendid Cooperation: Supervisor Campbell consulted with Meteorologist Norquest with the result that Mr. Norquest is running in the daily weather report the following slogan: "Fire Prevention Week: Lumbering, Farming and Livestock Industries, and National Playgrounds at stake." This slogan is set up in bold-faced red letters and attracts immediate attention.--Boise Accelerator.

Girl Scouts Enjoy Lecture: Miss Stone of the Office of Public Relations recently entertained several troops of local Girl Scouts at the new Central Junior High School auditorium with an illustrated talk on Forest Conservation. This is the first of an extended series of such illustrated lectures which Miss Stone will undertake to give for the 500 or more Girl Scouts of Ogden.

Ranger Bill Says:

A bad disposition is like a spark in an old stub--if you don't watch it's liable to flare up and cause trouble.

Clerk E. Z. Worker has quit usin' pencils with erasers on 'em since they made him Executive Asst.

The old Timberline Trail is open to travel again, says Guard Bush Mann--the logs across it havin' rotted and fell down.

DISTRICT 5 - CALIFORNIA DISTRICT

Splendid Cooperation: The Los Angeles County Board of Supervisors has given the Service $20,000 for the Fiscal Year 1922 with which to construct trails, fire lines and public camps.

He Don't Want Any Fire Protection: The following letter was recently received by the Supervisor of the Plumas Forest:

"I don't want any fire protection. If you see any fire in my timber, don't touch it. If the fire goes over my land once in ten years it will be all the better. I lived there in plumas Co from 1871 to 1900 and worked in the timber all the time. there was a wilderness for twenty miles all around me and the forrest fires done no damage to the timber if the fire got out it burnd only the old dead stuff, killd all your pine beedles. I think the forrest servise is a grand humbug. I have only about 60 acres of timber, and if I had that may thousands acres I would give it no protection only to try and burn the trash out of it once in about ten years."

Weaverville to Get Radio Station: According to information received from the Forest Supervisor of the Trinity National Forest, a summer radio station will be established by the Army at Weaverville. This is a part of the air patrol work that will again be carried on during the summer, and in order to get quick communication, radio stations are being established in a number of California towns including Mather Field and other bases. Special radio operators will be stationed at each of the points.

Camp Fire Permits: About 11,000 camp fire permits were issued on the Angeles during the past calendar year.

Ranger Entertains Boy Scouts: We recently asked the Boy Scouts of Covelo to spend a day with us at the Covelo Station.

They came to-day, accompanied by Rev. Broadhead of the Presbyterian Church at Covelo, Rev. Ford of the Baptist Church at Covelo, and Rev. Schillinger of the Methodist Mission at the Round Valley Indian Reservation.

We served a camp style dinner for them at the Covelo Station Public Camp. Beans, macaroni, coffee, bacon, bread, syrup, prunes, etc., made up the bill of fare. You should have seen the boys eat after a 7½ mile walk from town, and the preachers each stored away quite a bit.

After dinner I explained the working of, and the need for our protection system. Both boys and preachers took quite an interest and asked questions enough to keep me going for a long while.

I feel that they enjoyed the day and that we have made some new friends for the Service.--Douglas Robinson, California.

Fire Prevention to Be Taught in Schools:

Assembly Bill No. 769 has been signed by the Governor: We believe that this is a very valuable preventative measure and should greatly help reduce carelessness with fire in the woods as well as in the homes. It provides that each teacher in any public school of the State of California shall devote a reasonable time in each month during which such school is in session to the instruction of the pupils thereof, in a course of study and fire prevention comprising ways and means of preventing loss and damage to lives and property through preventable fires.

Trout Cost $200 Each: According to a report from San Bernardino, R. F. Garner, Jr., of that city has a story of $200 trout taken from Lake Hemet.

The Lake Hemet Water Company owns the lake--a nice, large, smooth lake, famed as the lurking place of multitudes, schools, shoals and families of trout, who were supposed to have been awaiting the opening of the fishing season with an increasing eagerness to be fed--and, eventually, to be food.

Encircling the pond is a high, sharp barbed wire fence. One gate admits the sportsmen, and an admission fee of $5 per each is extracted from every fisherman who enters.

The first day of the season, according to the word of the gatekeeper, who told the story to Garner, 300 followers of the renowned Walton handed over their $5 per head and embarked on the lake, with full and complete permission to fish all day and take home all they caught.

Near dusk the 300 sportsmen came ashore. The gatekeeper was on hand again and questioned each as to the number of trout he was taking home to a hungry family.

Here's the tragedy. Three hundred fishermen caught only eight small trout. Eight divided into $1,500, plus the cost of a fishing license and a few cents added for gasoline and expenses, places the value of each trout at well over $200.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Forest Protection Week Goes Over: Marked progress was made during the week of May 22-28 in "selling" forest protection to the public of the Northwest. The Governors of Oregon and Washington issued proclamations in response to the President's request. A comparison of the responses to appeals of 1920 and 1921 is most interesting and encouraging. Last year many of the requests sent to civic bodies, public agencies, schools and others, went unheeded, while this year these same agencies cooperated in splendid shape. Forest protection is moving ahead.

Many Supervisors and Rangers not only made talks during the week before commercial clubs, schools, Boy Scouts, and other organizations, but put on window displays, guessing contests, and induced local business houses to include fire slogans in their ads in local papers. The Cashmere Valley Record, in Wenatchee County, was turned over entirely to Forest officers that week to run, and they ran it! The effort of the special Forest Service Committee in Portland was to supply to field officers of the Forest Service, the press, civic and other public agencies, protection material which they could use during the Week. A few figures of the amount of material sent out may be of interest.

Five motion picture films were circulated through Washington and Oregon during May; 300 lantern slides were sent out for use in special talks; 1,000 copies of the President's proclamation; 1,200 circulars containing "fire pointers"; 2,500 copies of the special number of "Safeguarding America Against Fire"; 900 copies of a press circular on the Snell Bill; 4,700 fire prevention sticker seals; 780 press bulletins, "The Last Great Stand"; 5 special stories for Sunday papers in Portland, Seattle, and Tacoma; 48,000 fire slogan sticker seals; 1,250 circulars containing fire slogans; 3,200 special printed circulars for teachers; 4,500 of the printed sheet "Protecting the Forests from Fire"; 2,000 of "The Nation's Woodlot"; 20,000 auto windshield stickers; 5,500 of "Harry Hunter" leaflets; 900 special fire signs of the Western Forestry and Conservation Association; 20 rubber stamps to chambers of commerce in Oregon and Washington, reading "Forest Protection Week, May 22-28. Higher taxes if Forests Burn"; 3,200 fire prevention buttons; 5 special letters to U. S. Weather Bureau offices in Oregon and Washington, asking cooperation (which was given) in use of fire slogans on daily weather maps; 2,000 copies of circular "This Man Is Up Against It." In all, over 100,000 pieces of fire prevention publicity material were sent out. Especially fine cooperation was given by Mr. C. S. Chapman of the Western Forestry and Conservation Association, and Mr. Herbert Evison of the Natural Parks Association of Seattle, and by fire protection organizations, by the press, commercial clubs, advertising agencies, teachers, auto associations, Boy Scouts, local business houses, outdoor clubs, and others. In D-6 the Week went big!

Deschutes Folder Map: Material for a tourist folder map of the Deschutes has been prepared by the Forest force and has been sent to the Forester. This folder map is to be printed at the Government Printing Office, probably during the summer.

Forest Folder Popular: The folder issued by the Government Printing Office about a year ago for the Cascade has proven so popular that the edition is almost exhausted. The Eugene Chamber of Commerce in 1920 put out a pamphlet containing much of the material in the Service publication and are planning to issue a larger pamphlet this year using the Forest Service data, this in order to supply the demand for such camping, fishing and hunting information.

Reaching the Sportsmen: The Forest Service received much satisfactory publicity at the Sportsmen's-Tourists Fair held at Wenatchee, Wash., this spring. The need of care with fire in the woods was effectively brought home to the 7,000 visitors. Moreover, the cordial relations established with the sportsmen should be productive of much good. There are now four local sportsmen's associations in the county with another local and a county association soon to be perfected. Incorporated in all their constitutions is a clause calling for cooperation with the Forest Service in fire protection.

Much credit is due to Messrs. Lenzie and Foster who installed the exhibit. A Ranger's camp with the right kind of a camp fire was shown. On a table were displayed about a dozen herbarium specimens and Forest Service literature. Nearly 1,000 copies of "In the Open" were distributed, together with other literature.--A.H.S.

Cattle and Horse Raisers' Convention: The seventh annual convention of the Oregon Cattle & Horse Raisers' Association was held at Canyon City May 24 and 25. Approximately 400 persons were in attendance.

The convention was held in a new assembly hall recently constructed. The walls were decorated with many exhibits of mounted plants and grasses, pictures of range improvements, etc., while in one corner were large models prepared by Ranger Cecil Bennett showing two areas; one forested and carpeted with grass on which stock were grazing, the other a barren waste. Assistant District Forester Kavanagh addressed the convention on range appraisal and Grazing Examiner Peterson gave an illustrated lecture.

DISTRICT 7 - EASTERN DISTRICT

Govt. Wins: Out of the 13 game cases at the May term of court which came up for trial, the Government gained all thirteen, 9 through a plea of guilty and 4 by verdict of guilty. Three different men were fined from $150 to $200 each; other fines ran from $10 to $50 for technical cases of trespass. So far the first fines are the largest that have been given in any of the game cases from the Pisgah Game Preserve.

Under an Administrative Use Permit given to E. C. Robbins of Pineola, N. C., he collected 4,000 rhododendron and planted in their place 3,800 white pine 1-2 year old, covering the fail places on an old burn of 10 acres on the Pisgah.

A Special Use Permit has been granted the Asheville Y.M.C.A. for a lake and camp site on the Bent Creek District of the Pisgah. The construction of a concrete dam is contemplated and the formation of a 10-acre lake. The camp situation is ideal, in a pine grove with running water at hand. The location is out 12 miles from Asheville.

Asheville Business Men are interested in the development of a municipal water supply from the headwaters of Bent Creek in the Pisgah Forest. The proposed watershed will cover 1,500 acres. If the proposition is concluded it will be agreed that the Forest Service reserve the right to utilize the timber at any time if possible without contamination of the water supply. If impossible, the permittees will pay 5 per cent on the capital represented by the value of the timber resources. The rental value is fixed at $500 per annum plus $5 per mile for the pipe line, charge to be readjusted at the end of 20 years, and thereafter at the end of each 10-year period.

The Fire Season on the Pisgah, which closed about the first week in May, has been the best experienced for several springs. The total fire acreage has been about 250 acres inside the Forest, which is less than one-fourth of that burned over on an average during the past three years. This year will see us rid of 2 bad "fire starters," namely, the Perley & Crockett railroad on Mt. Mitchell and the T. T. Adams Company on Armstrong Creek.

Service Bulletin

U.S. FOREST SERVICE
(Contents Confidential)

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EVERY WINK A PICTURE

(A few simple thoughts for Service photographers)

By E. S. Shipp, Washington.

Nature recognized the educative value of pictures, for she furnished us with eyes through which light impressions are conveyed as pictures to the brain, and there filed away for future use.

It is a simple matter for us to review these mental pictures of familiar objects, scenes, and faces. Sight is our most important sense, yet the eye is a comparatively simple organ. It is really a self-focusing little camera, equipped with shutter, lens and sensitive surface,--even an iris diaphram which automatically regulates the amount of light passing through the lens. Our eyes and our cameras are so similar that the study of one teaches us much of the other. All our senses function equally as well in darkness as in the light, except seeing. Light is necessary whether we record pictures with the eye or with the camera.

It is assumed that light radiates from its source in waves of various lengths, because it is possible to decompose a beam of light into its spectral colors. Some of these colors are much more active chemically than others. Those appearing brightest to the eye affect photographic emulsions the least. The blue and violet rays affect the plate or film to a greater degree than do the green, yellow, orange and red.

Objects have color because they reflect only those rays which they have not absorbed. Thus a red object absorbing all the rays except red, requires a greater exposure than a blue one, though the red may have appeared much brighter to the eye than the blue. A black object does not affect the plate at all, for it has absorbed all of the visible rays.

When man noted the defects and limitations of the eye, he began to suspect there might be something of interest beyond his field of vision, so he set about to correct some of these defects. This he accomplished by means of various optical instruments, until with the modern lens and dry plate, he has actually photographed the invisible. Invisible to the eye is the aura, a radiant energy enveloping all living bodies, yet it may be photographed, and by its color, size and shape, aid in the recognition of certain ailments.

Stars, and worlds in the making, so distant that it requires centuries for their light to reach us, and invisible to the eye even with the aid of the most powerful telescope, are made visible by means of dry plate and lens. Photographs such as these are possible because man has improved upon the cameras nature furnished us.

Some of the natural defects and limitations of the eye are taken advantage of to furnish us with instructive entertaimment. If we view a bright object a moment and then close our eyes, we find the image will persist for an appreciable time. This is known as persistence of vision or after image. Because we are unable to dispel the image of an object instantly upon ceasing to look at it, we fuse into continuous action, pictures, presented intermittently, when we view the so-called "movies." This same persistence of vision makes it possible for us to view "movies" in natural colors. A series of pictures, red, green and blue, for example, are presented alternately, each color leaving an after image, finally fusing as one on the retina and conveying to the brain the impression of natural colors.

Our eyes do not record in detail as do our cameras, and because of the frank realism of our pictures, they are often disappointing. This teaches us that "we have eyes and see not" and that perhaps the charm of the picture as we saw it was color, form, or magnitude rather than detail.

American Tree Seed for Austria

In March 1921 a letter was received from Dr. Adolph Cieslar of the University of Agriculture and Forestry at Vienna. He requested a small amount of forest tree seed from the Forest Service in order to carry on some of his work at the University. This request was complied with, and the attached is a copy of a letter just received from him acknowledging receipt of the seeds.--C.R.T.

(COPY)

Wein, am May 17, 1921.

Honored Colleague--

I note by your kind letter of March 19 that you do not intend to ignore my request for seeds of North American forest trees, and have requested the forest districts to send seed.

During the last few weeks I have received very valuable consignments of seed from W. H. Schrader, Monument, Col., the District Supervisor in Halsey, Neb., W. G. Wahlenberg, Haugan, Mont., and the District Supervisor in Portland, Ore. There were in all 13 bags containing seed of Picea Engelmanni, Pinus ponderosa, Pinus Banksiana, Pseudotsuga taxifolia, Abies grandis, A. Amabilis, A. nobilis, and Larix occidentalis.

I wish to thank you most heartily, my dear colleague, as well as the gentlemen of the above named districts for these liberal gifts of seed. I shall now be able to grow thousands of plants of North American forest species, part of which will be used for further study, and part sold. * * *

The United States is now doing so much good for our oppressed country, that every Austrian is filled with gratitude toward your fortunate land.

New Appalachian Forest Experiment Station

Plans are progressing to start the investigative work in the southern Appalachians at a new Experiment Station in July. For the present the Station will consist of an office at Asheville, North Carolina. E. H. Frothingham, who has been connected with investigative work in the East for many years, and has specialized for the past several years in the southern Appalachian region, will be in charge. Edward F. McCarthy, once a Forest Assistant in District 4, and more recently a professor at the Forest School, Syracuse University, and investigator for the Commission of Conservation in Canada, will be a member of the staff. The staff will also include C. F. Korstian, who is being transferred from District 4, where he has had extensive experience in investigative work at the Fort Valley Experiment Station. Ferdinand W. Hassis, for the past two years a member of the force at the Fort Valley Experiment Station, completes the list of technical men. With four such experienced men at this Station, splendid results are confidently expected.--E.K.

Forest Tables

W. B. Barrows, Washington

For more than 20 years the Forest Service has been collecting data and preparing forest tables of various kinds: form, volume, growth and yield. To date tables of those four kinds are available for the following eleven species: aspen; black, green, and white ashes, paper birch chestnut, cottonwood, balsam and Douglas fir; jack, loblolly, lodgepole, longleaf, Norway, shortleaf, western yellow, and white pines; yellow poplar, and red spruce. Even-aged stands of most of the trees mentioned above are common enough to make it practicable

Forest Tables (Cont.)

to construct normal yield tables applicable to them. Other species, such as basswood, beech, yellow birch, western red cedar, white fir, red gum, hemlock, sugar maple, chestnut and red and white oaks are less often found in even-aged stands, and the problem of preparing yield tables for them is a more difficult one, and the tables if prepared do not have a wide application.

For a number of species there are no tables of value. These neglected trees include red ash, river birch, sweet (black) birch, white (gray) birch, yellow buckeye, butternut, southern white cedar, the cherries, black cottonwood, the elms (except white elm), black gum, hackberry, cucumber tree, tanbark oak; limber, pinon, pond, and whitebark pines, white spruce, and many trees of minor importance.

A list of the more important species not already mentioned is given below to show the kinds of tables which are available in each case. "U" indicates that one or more tables have been made but that they are unsatisfactory. "S" indicates that satisfactory tables are on file. It is, of course, impossible to assign the tables accurately to one class or another in every case. A dash indicates that no tables, or only very inferior tables are at hand.

Species	Kind of Table				Species	Kind of Table			
	Form	Vol.	Growth	Yield		Form	Vol.	Gr.	Yield
Arborvitae	-	U	U	-	Oak, bur	-	-	U	-
Bigtree	-	U	-	-	post	-	U	U	-
Catalpa, hardy	-	-	U	U	scarlet	-	S	U	-
Cedar, incense	-	S	-	-	Spanish	-	-	U	-
" red	U	S	S	S	swamp white	-	U	U	-
Cypress, bald	U	S	S	-	Osage orange	-	-	U	-
Elm, white	-	-	S	-	Pine, Austrian	-	-	U	-
Gum, blue	-	S	S	S	Jeffrey	-	S	-	-
Fir, alpine	-	U	U	-	Scotch	-	-	U	U
amabilis	-	S	-	-	scrub	-	U	S	S
noble	-	S	-	-	slash	-	-	U	U
red	-	S	U	-	spruce	-	-	U	-
Hemlock, west'n	-	S	S	U	sugar	-	S	S	-
Hickories	-	U	S	S	west. white	-	S	S	S
Juniper, Ry. Mtn.	-	-	S	-	Redwood	-	S	-	-
Larch, European	-	-	-	U	Spruce, black	-	-	U	-
western	-	S	S	S	Engl'm	U	S	S	S
Locust, black	-	U	S	-	Norway	-	-	U	-
honey	-	-	U	-	Sitka	-	S	-	-
Maple, boxelder	-	-	U	-	Tamarack	S	S	U	-
red	-	-	S	U	Walmut, black	-	-	U	-
silver	-	-	S	U	Willow, black	S	S	-	-
Mulberry, Rus.	-	-	U	-	crack	S	-	-	-
Oak, black jack	-	U	-	-	white	-	-	U	-
black	U	S	S	U					

Boy Scouts Prize Fire Essay

By Alfred Drennon, Colorado Springs, Colo.

(Winner of 1st Prize, Forest Protection Week contest)

"Perhaps two of the most important things man has learned to use for his own betterment are, fire and the forest. Fire is a great asset. Without it, man would probably never have left the torrid parts of the earth, and had he remained there, he certainly would never have developed the energy necessary for civilization. It cooks the food, runs the railroad, and molds the steel as man wills. But when this giant is allowed a chance it will do a great amount of damage.

"The forest is of great value to the human race. By far the greater part of all the structures in the world are built of wood. The homes of the people almost entirely so. It can easily be seen, therefore, how wrong and wasteful it is to allow fire to get started in a forest.

"Since civilization began wars and fires have been the two things that have destroyed the most lives and the most property. The former is often a right thing. But fires have never netted anything but loss. Of course this loss is not always great, but there is always the risk that it will be.

"Fire can never be depended upon. It may take 15 minutes to start your fire in the open, but that same fire, if not properly extinguished, may set an acre of woods ablaze in half that time.

"Apply all this to yourselves. It means that when you are on a hike or camping trip and build a fire, put it out. Your slogan should be, 'Be sure your fire is out, then bury it.' 'Dead men tell no tales, dead fires cause no damage.' Then, as all dead material should be buried, bury your fire. Be sure that you do not bury it alive, however, as this is cruel, and there is a possibility that it may crawl out again after you have gone away. Then one other thing, you should not be content with being careful yourself, but you should see that others are also. Remember that it is more honorable to prevent a fire than to put one out."

The judges of the contest were H. C. Graves, Colorado Springs "Gazette"; C. G. Bates, Fremont Experiment Station, and Prof. Gordon Parker, Forest School, Colorado College.

I'D LIKE TO KNOW

When the cowman own the ranges;
And the lumbermen the trees;
And the miners own the minerals;
And the "touries" own the breeze--
When the hunters own the big game;
And the fishermen the trout;
And the "nesters" own the homesteads;
And our jobs are owned by Scouts--
When the grocer owns our salary;
And the Users own our time;
Will you tell a common Ranger
Where in heck do I get mine?--W.H.

Evaporation as Related to Forest Regions

By C. G. Bates, Fremont Experiment Station

Of all the conditions surrounding the growth of forest trees, none that we can measure in a simple manner reflects more clearly than the evaporating rate the variations in the struggle for existence. We refer to variations as between regions, and as between successive periods in the same region. Thus the eastern and Pacific Coast forests are probably called on to supply themselves, for unavoidable loss by evaporation, with less than half the moisture which trees in the Central Rocky Mountains require. And, in the latter locality, we find one ten-day period creating requirements perhaps three to four times as great as the preceding or following period. The growing season of 1917 demanded, locally, nearly twice as much water as the season of 1920. There was available only three-fourths as much in 1917 as in 1920.

As precipitation increases, evaporation usually decreases, so that the balance between these two ought to give an extremely valuable basis for comparison of forest regions, and of the relative qualities of growing seasons in the same region. Considerable has been done in relating the width of tree rings to records of precipitation, but much more can be done with evaporation records which will show how far the tree was called upon to deliver moisture to the atmosphere,--what balance of moisture might have been available for growth.

A record of evaporation summarizes or integrates all of the atmospheric conditions as they affect the tree most vitally, that is, as they affect its water loss and net moisture supply. Sunshine, air temperatures, wind velocity, and atmospheric humidity all have their bearing on evaporation, and as affecting trees, the amount of sunshine is ordinarily the most potent factor. Thus it is seen, since sunshine and warm air stimulate growth, that up to a certain point an increase in evaporation may mean a stimulation of growth; beyond this point the increase means detriment. Because of this complication, a situation must not be judged necessarily bad for plants because it shows higher evaporation rates than some other situation.

Evaporation has always seemed a most important consideration with the coniferous forests of the West, because such forests, retaining their full foliage in winter, may at times be called upon to give up large quantities of water, when no more can be obtained from a frozen soil. Most persons have seen fruit trees killed in this way, and the effects of the Chinook, occurring on the eastern side of the Rockies, are merely "winter-killing" of a prompt and effective form.

Although a great many instruments have been constructed for measuring evaporation, the necessity for meeting this problem of winter evaporation called for a new kind of instrument for forest studies. Even the "Open pan" type of evaporimeter is difficult to handle in the winter, while the amount of evaporation from a free-water surface is never a very good indicator of the stress to which plants are subjected. For this reason, although attempts have been made to map the normal evaporation rates for all portions of the United States, much more can be done profitably to give comparative data on all the forest regions. The evaporimeter which has been developed under the writer's care during the past four years has solved the greatest difficulty in connection with securing such records for year-long periods. As a wider distribution of these instruments is secured, an attempt will be made to present the results in a manner which, it is believed, will show more clearly the causes for the vast difference between eastern and western, northern and southern types of forests.

The Forest Officers are Resident Naturalists. No?

By Smith Riley, Washington

The National Forests are the nation's game fields. You can't get away from it. Try as you may, this problem will be waiting for you on the top step.

Charles C. Adams, Director of the Roosevelt Wild Life Forest Experiment Station says: "With regard to the influence of surface fires upon birds, it is a good idea to get the Audubon people interested. I do not know that anyone has made a special study of the subject. All I have seen bearing upon the injury to wild life by fires is scattered remarks and no careful study.

"I don't recall a really important article on the influence of fires on animals. Before we make real headway on these problems we must have resident naturalists at work in the forests working on these problems. The sportsmen could be approached with a strong argument for fire protection if we had good evidence showing the harm done to game by fires."

Who said the National Forests are the nation's game fields?

In keeping with Roy Blood's letter about the deer on the Sierra Forest, there is an article in the Journal of Mammalogy of February 1921, called "A Note on the Habits of a Timber Wolf" by Charles Eugene Johnson, in which he describes a close-up view of a gray wolf observed in the Superior National Forest of Minnesota while making a trip with an officer of that area.

Yes! These resident naturalists must observe the wild life and record their observations so a direct appeal can be made to the game protectionist and sportsman for fire protection.

Highest and Lowest Points in the World

The difference between the highest and lowest points of land in the United States is 14,777 feet, according to the United States Geological Survey, Department of the Interior. Mount Whitney (Sequoia National Forest), the highest point, is 14,501 feet above sea level, and in Death Valley there is a depression that lies 276 feet below sea level. These two points, which are both in California, are less than 90 miles apart. This difference in height is small, however, as compared with the difference in the height and depth of land in Asia. Mount Everest rises 29,002 feet above sea level, whereas the shores of the Dead Sea lie 1,290 feet below sea level, a total difference in height of 30,292 feet. Mount Everest has never been climbed.

Highest and Lowest Points in the World (Cont.)

The greatest depth yet found in any ocean is 32,088 feet, the depth at a point about 40 miles north of the island of Mindanao, in the Philippine Islands. The bottom of the sea at this point is therefore more than 11-1/2 miles below the summit of Mount Everest.--U.S.G.S. Press Bulletin.

The Tourist Scourge

One of the greatest blessings of modern civilization is the automobile, but one of its greatest scourges is the careless tourist.

"There's never a law of God nor man runs north of fifty-three"--nor beyond the city limits of the careless tourist's home town. The thin crust of civilization seems to rub off of some people the minute they enter a new country. It was thus when the Vandals invaded Italy--when the Germans invaded Belgium--and it continues thus, to a degree, when the annual tourist army invades New Mexico.

The most beautiful camp spots along our highways are littered with melon rinds, tin cans, and Sunday supplements. Signs for the direction of travelers are riddled with bullet holes. Under the trees and telephone poles lie the remains of thousands of birds, many of them beneficial, shot down in cold blood from the passing cars. And now, to cap the climax, come repeated reports of tourist camps found full of quail or duck feathers, a month and more before the opening of the season. Ammunition dealers report that many tourists boast openly of the game they have killed contrary to law and without license.

Tourists may be a handsome source of revenue and all that sort of thing, but we venture the belief that the average New Mexican would prefer for the Vandal brand of tourist to keep his money and stay at home. Real folks, of course, are always welcome to our State, and the more of them the better, but we cordially invite the other kind, no matter where they live or how much money they have, to get out and stay out of our borders.--The Pine Cone (New Mexico Game Protective Assn.)

WASHINGTON NOTES

The National Association of Wood Turners held their annual convention in Washington during the Week of June 5. Addresses were made before the convention by Colonel Greeley, and Arthur Upson of the Forest Products Laboratory.

In company with wood turning manufacturers, the Service had an interesting exhibit at the convention headquarters. At the close of the exhibit all the companies making displays donated their exhibit material to the Service.

Col. Greeley is in the White Mountains on a business and vacation trip.

Assistant Forester Carter leaves for the west on June 27, and will sail from Seattle for the wilds of Alaska, in company with Associate Forester Sherman, on July 2.

Visitors: Dr. R. Helge Nelson, Professor of Geography, University of Lund, Sweden.

Dr. Ichiro Sonobe, Assistant Professor of Forestry, Tokyo Imperial University, Japan.

Mr. Carl W. Defenbaugh, President, American Lumberman.

E. R. Hodson, who has been connected with Forest Service investigative work in District 4 and the Washington office for many years, has recently resigned to practice law in this city.

The Number of Recreation Visitors to the National Forests, in any District, is a fine bit of news at the end of the summer season. District 2 has been compiling such figures from all available sources for a number of years, and the data thus secured has received large press use. There is need of similar figures from other Districts, in order that some approximation may be made of the number of people who enjoy the outdoor life attractions of the Forests. Estimates now place the total for the United States at something like 5,000,000, but there is little on which to base such a statement, other than one man's guess is as good as another's. It is not so difficult to get these figures as is commonly supposed, and their value to the Service makes them well worth while.--WH.

Recent F. S. Fiction: "A Death Struggle with a Grizzly" by Ray R. Clarke, Colorado National Forest, Field and Stream, July.

"Good Roads Make Famous Oregon Camp Grounds Popular," by Albert Weisendanger, Oregon National Forest, The Highway Magazine, July.

Bedtime Fire Stories: Thornton W. Burgess, author, known and beloved by thousands of American children, recently completed a series of ten Bedtime Stories on "The Red Terror," which have been running during the past two weeks in newspapers throughout the country. Needless to say, the Green Forest with all its inhabitants from big Buster Bear to little Stickytoes the Tree Toad, were saved from the awful menace by the rain which the Merry Little Breezes of Old Mother West Wind drove up. Mr. Burgess wrote these stories in kindly compliance with request made by Assistant Forester Herbert A. Smith. The thanks of the Service is due the author for his vivid presentation of the danger and cause of forest fires to the host of little tots, and their parents, who each evening eagerly look forward to the Bedtime Stories.

Ranger Bill Says:

Doin' things when somebody tells you how don't count for nigh as much as doin' things that nobody can tell you how.

Thank Goodness there ain't many more colors in the spectrum, said Guard Lem Walker t'other day, as he tacked up a new fire sign.

Now that the weather's gettin' hot I'm preparin' for the usual run of District and Washington office Inspectors.

* * * * *

FOREST PRODUCTS LABORATORY

Cardboard Signs: In selecting colored cardboard for outdoor signs, care should be taken to see that the color is not merely a coating of dyed clay. Recently the Laboratory received for examination some fire-prevention signs which had been printed at the Government Printing Office on yellow cardboard stock, and posted in a Michigan forest. The signs had not been up three days before the rain had obliterated all the words. It was found that the paper had simply been surfaced with clay mixed with aniline dye, and as soon as the paper became soaked, the coating had loosened and carried the ink away with it.

Colored cardboard for outdoor posters should be made of colored pulp, or else should have a special well-sized liner, or outer layer of fiber, containing the color. The printing can then be removed only by an actual removal of the fiber itself. As a further protection against the weather, the signs should be dipped in paraffine. The wax may be applied without much difficulty either in the molten form or in a gasoline solution.

Fighting Fire with Bubbles: The Laboratory has been asked to pass on the merits of the fire form fire extinguisher, which is being considered for trial in fighting forest fires in Maine. Whether or not this extinguisher in its present small form would be adequate in putting out a real fire, such as the western districts have to cope with, is very uncertain, but the principle upon which it works appears to have great possibilities. The ordinary hand extinguisher is little more than a ready means of squirting a small, well-directed stream of water on the fire. A small amount of carbon dioxide may be applied at the same time, but this rapidly dissipates and probably does not assist much in quenching the flames. In the case of the fire form extinguisher, the material produced is not a stream of water, but a stream of fairly permanent bubbles which are filled with carbon dioxide. The bubbles act as tiny gas bombs, carrying the carbon dioxide to the spot where it will be most effective before they burst. This is a new principle in fire extinguishers and seems to be a very valuable one.

Lumber from Turpentined Pine Trees: The turpentining of pine trees, according to information obtained by the Laboratory, does not lower the strength of the resin content of the wood. The crude turpentine, or oleoresin, is not drained from a reservoir in the tree, but is produced by the living cells in the sapwood at or near the spot where the cut is made on the trunk. No turpentine is produced by the heartwood, because all of its cells are dead. The heartwood may be saturated in places with pitch, but this does not readily flow out, as does the resin freshly formed in the sapwood. Hence it is clear that the major part of the tree is not affected in any way by the turpentining operation.

No appreciable loss from death of trees or from reduced volume of merchantable timber occurs if the turpentining is properly done. The greater part of the wood that is chipped away would not have become finished lumber but would have gone into slabs and edgings at the sawmill. With proper treatment the turpentine faces remain moist and healthy, and the wood underneath does not become saturated with resin. There should be little or no more degrade, therefore, from pitch streaks in turpentined than in unturpentined timber.

DISTRICT 1 - NORTHERN DISTRICT

Forest planting, as practiced in this District, requires a considerable degree of faith and patience in awaiting results. When one sees small plants, three to five inches high, stuck in the ground among brush and other vegetation, it seems hard to believe that they will amount to anything. It is somewhat reassuring to one's faith in planting work to see some extensive successful plantations which have been established long enough to show results.

Two very successful plantations of this sort were recently examined on the Lolo Forest. The plantation on Savenac Creek, amounting to about 300 acres, was established in the spring and fall of 1912. It is all yellow pine, both 2-0 and 1-2 stock being used. The last count showed a survival of considerably better than 80 per cent, and a good many of the trees are now 4 to 5 ft. high. The entire plantation is growing vigorously, and ought to average close to a foot a year in height growth, from now on.

The other plantation examined is on Twin Creek north of DeBorgia on the Lolo. This was established in the spring of 1915, about 700 acres being planted. Practically the entire plantation, consisting chiefly of white pine, yellow pine and spruce, is thoroughly successful, and the young trees are growing vigorously. A small area of about 10 acres of Japanese larch, (larix leptolepsis) is particularly interesting. About 80 per cent of the trees originally planted are surviving, and they will now average about 4 ft. in heigth. Apparently this species seems thoroughly adapted to this climate.

There were also about 13 acres of Big Tree (Sequoia Washingtoniana) planted on this area. About 1/3 of the plants are still alive, but have grown very little, although there is some indication from last year's growth that some of them may yet grow successfully.

About 90 acres of yellow pine were sowed in seed spots, and the last count showed better than 500 successful spots to the acre. This is one of the few successful sowings in the District.

There are also two or three sowing areas of yellow pine near the Savenac Nursery on which the seed was sown shortly after the 1910 burn, both broadcast and in seed spots, which show a high degree of success. This is probably due to the fact that the fire destroyed the rodents on the area, and this, combined with the favorable season of 1911, has produced a very complete stand of yellow pine on these areas, which amount to about 30 or 40 acres.--E.K.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Colorado Floods: The floods in Colorado have jumped from the eastern to the western slope and a good deal of trouble has been experienced from the Grand River and the Animas River. Sections of the railroad have been washed out and as a result, the mail service is badly demoralized. There is only one train a day for the western slope, over the Rio Grande out of Denver, which is forced to detour by way of Alamosa and the narrow gauge. Meanwhile, we continue to have rains throughout Colorado, which is in marked contrast to the ordinary dry June weather, and despite the floods, we have reason to be thankful for the greatly decreased fire danger.

"Page Dr. Watson": In connection with a recent fire on the Pike, evidently spreading from a camp fire, the Ranger searched everywhere for clews, but was able to find only a hairpin and part of a wrapper from a bar of sweet chocolate. He is very anxious to have one of the D-5 sleuths trace the culprit from this evidence.

By Act of the Colorado Legislature, the State Highway Commission was abolished and Major Blauvelt appointed State Highway Engineer, to direct road activities in Colorado. An advisory board of seven members has also been appointed to render advice concerning road matters in the different sections of the State. Major Blauvelt's reputation is very good throughout Colorado as an engineer and executive. He assisted in the construction of the Denver & Salt Lake Railroad.

Road Development on San Isabel Planned: District Forester Peck, District Engineer Mendenhall, Assistant District Engineer Brownlee and Supervisor Hamel made a recent trip on the San Isabel where special attention was given to putting a road over Mosca Pass. The people of the San Luis valley are very anxious to have this road built. It was found that the approach to it from the San Luis valley side is an easy one and that the road would make accessible the Great Sand Dunes. If sufficient cooperation can be secured, it is proposed to have the location survey made this season.

Farm Bureau Recognized: The Middle Park Stockgrowers Association on the Arapaho Forest has merged with the Grand County Farm Bureau, believing that more can be accomplished in this way than by an independent organization. The plan is to create a livestock division of the Farm Bureau which will handle all matters pertaining to livestock on the Forest ranges, and the District Forester will recognize the Farm Bureau through its livestock division under the advisory procedure.

Conditions Favorable for Sheep: Very favorable weather for lambing has prevailed this spring and a large lamb crop is expected by the sheepmen.

Forage conditions, although a little late, are very good over most of the District this year; some excellent rains having occurred in May.

Pure Bred Bulls: The last Colorado Legislature passed a pure bred bull law which is to become effective in 1923. No change is made in the number, the ratio of 25 breeding stock to 1 bull having been retained.

The Saguache County Game and Fish Protective Association, recently organized under the direction of Forest Supervisor Agee has been doing some very interesting work in taking spawn this spring. Forest Ranger F. L. Trickel, who has had experience in the U. S. Hatchery at Leadville, is superintending the job. About three-quarters of a million rainbow eggs are already hatching. The Association at its own expense has constructed troughs and a house in which to hatch the eggs, and has piped water from a spring of favorable temperature.

Fire Record: Up to date, for this calendar year, this District has experienced 88 fires covering a total of 2,251 acres of National Forest land. The cost of fighting these fires was $3,164.67. Conditions are pretty favorable in D-2 right now on account of recent rains.

Forest Fires and the Careless Smoker: "There have been 7 or 8 fires on this Forest in the last 40 days that I am absolutely satisfied started from matches thrown down by smokers or from cigarettes or pipe ashes or in some way directly traceable to smoking. A few days ago I was in a camp in the Forest when one of the cowboys went out from camp probably a quarter of a mile to bring back some horses that were grazing away from camp. He had just returned to camp when we observed a fire exactly on his tracks where he had gone to the horses. If the fire had not been discovered within 5 minutes it is quite likely that everyone in the camp would have ridden directly away from it and a bad fire resulted before it would have been discovered or at least any one of that outfit known of it and before a fireman could have arrived."--T.C.H.-Sitgreaves)

Boy Scout Camp in Sierra Anchas: "The first detachment consisting of about 40 Boy Scouts from Globe & Miami organizations have arrived at their summer camp in the Sierra Ancha Mountains. These Scouts will remain in the mountains for two weeks when they will be replaced by another detachment. Tonto officers are glad to welcome the Scouts, as we know their organization stands for loyalty, cooperation and true citizenship."

D-5 Has Nothing on the Tusayan: The Tusayan has joined the ranks of the forests boasting an air patrol. However, it is only for this week, and there is no guarantee that it will be a regular thing. Lieut. Pearson of the U. S. Air Service landed on the Williams Aviation Field on Thursday evening, making a trip from Nogales to Williams in three hours, a distance of 270 miles. Lieut. Pearson is making his headquarters at Williams while carrying on his work of mapping air currents in the northern part of the State. On Friday he made a flight to the Grand Canyon, flying across the Canyon three or four times, and returning to Williams by way of Ash Fork. On Saturday he made a flight east toward Flagstaff, circling the San Francisco peaks. He has agreed while here to keep a lookout for any fires.

The Apache Fire: The most serious fire the Apache has had in recent years started on May 31 on Bear Wallow Creek near the Indian Reservation line. The high winds soon made a real fire in this dangerous country and over 60 men had to be used in suppressing it. The fire was controlled on June 5. It is estimated that the cost will reach $2,500.00.

Fire in Patagonias Out: The San Antonio fire (Patagonia Mountain) covered an area of about 2,400 acres in the woodland and grass types before it was put out. About 120 paid fire fighters were used, assisted by two companies of the 25th Infantry. A troop from the 10th Cavalry was also detailed to the fire but, arriving after actual damage had passed, they were asked to patrol another Mexican fire that threatened to cross. The San Antonio fire was about 10 miles wide in Mexico and is no doubt still burning.

Hung Jury in Fire Trespass Case: The Taos High School had a mock trial on May 23. The defendants were charged with throwing away a lighted cigarette which started a fire in forest material and leaving the same unquenched. The Jury disagreed, which was probably fortunate, as the attorneys had become somewhat heated and feelings were approaching bitterness on both sides. The public school children and some thirty or forty visitors were in attendance.--C.R.Dwire, Carson.

Speaking of Names: Historic John Paul Jones, in name at least, is hewing trail on the Tonto: his partners in labor on the same crew number among them Jim Taddy, and hovering in the background is one, Sam Slick. What's in a name?

Eating But Not Working: Fires that have been raging in the vicinity of Nogales, Sonora, are reported out by the Aviation Service.

The Chamber of Commerce of Nogales, Arizona, has been cooperating with the Forest Service to the fullest extent, and has already wired Mexico City to get the Mexican officials to put the idle men to work in the suppression of the fires along the border. These men are the ones just recently returned from the cotton fields of Phoenix and which the Mexican Government is feeding.

Mexico Getting Interested in Forestry: Newspaper clippings received recently indicate that the Government of Mexico is taking steps toward the adoption of a forest policy with a view to conserving the timber supply and protecting the forests from fire.

Rain!: Over an inch of rain in Albuquerque in 24 hours, the first real precipitation in 9 months. Looks like so much fine gold to the dessicated mesas, ranches and local scenery. Rusty umbrellas, dusty raincoats and long neglected wet weather equipment in evidence on the streets but many are venturing forth without any protection, for the novelty of the thing. Wet weather and a lowering sky under prevailing conditions puts a broad smile on every face, and a cheery "Fine doin's" in greetings.

Recreation Boom on the Ruidoso: Recreation on the Upper Ruidoso is on the boom. Seventeen lots have already been leased on the Everhart private recreation area and the agent in charge estimates that 50 or more cottages will be built this season on the entire area.

Fires: Two fires burning out of control were reported June 2--one on the Lincoln and the other on the Apache.

Ranger's Wife Fights Fire: A woman's name appeared on the payroll for a recent fire on the Sitgreaves, that of Mrs. Esther S. Shumway, wife of Ranger Shumway at Lakeside. Mrs. Shumway put in five hours on the fire line helping to extinguish the fire which broke out about two miles from the Ranger station.

Air Control on Catalina Fire: Two flights over the Catalina fire were made by Supervisor Calkins on April 30 in a DeHaviland plane piloted by Lt. G.R. Pond of the U.S.Navy, who happened to be in Tucson looking for a lost balloon. An excellent and detailed view of the fire was obtained.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Ranger Sets Record for Riding: "Ranger William W. Smith of the Wasatch Forest, during the month of May set a new record for saddle horse riding in the forest, according to his report filed with Supervisor Dana Parkinson. Smith asks credit for covering during the month 625 miles in the saddle over ranges which have neither roads nor trails, or an average of more than twenty-five miles a day. The highest previous record in the forest is fifteen miles a day. On May 26 Ranger Smith rode more than forty-six miles.

"In addition to this, the Ranger interviewed 107 grazing permittees regarding conditions on the forest ranges, cropped the tails of 430 head of cattle, selected thirty salting grounds, set eight posts on salting grounds, collected twenty rare plant specimens and traced a mile of forest border line."--Mighty good record!--Sale Lake Tribune.

Big Trees: In 1911 Supervisor Grandjean procured seed of the big trees (Sequoia Washingtoniana) from San Francisco. He planted these in the Forest nursery and in a couple of years transplanted them on his lot in Boise. Both of the trees are alive and doing well. The larger is approximately twenty feet in height and nine inches in diameter at stump height.

District 4 Has a Few, Too: A boast has been heard to the effect that District 6 is in possession of 137 livestock associations in Oregon and Washington with which they are cooperating. Just by way of comparison, District 4 has 237 cattle and horse associations and 26 woolgrowers associations on the various Forests. In addition, there are also five State associations. There is a total authorization for 1920 of 532,800 cattle and horses, 1,100 swine and 3,136,200 sheep and goats with 11,695 permittees for cattle and horses and 2,825 for sheep and goats.

The Right Idea: Forest Officer: It will be early enough when snow flies again on our fire zone Forests to pat ourselves on the back over any good results which may be attributed to our fire prevention campaign of 1921. I think it is timely now, however, to write a few words of appreciation for the way you fellows in the field have taken up this work and for the strenuous efforts you have given to it.

If indications are worth anything at all--Forest Protection Week this year far surpassed in effectiveness the effort of a year ago, and every feature of our fire prevention work is going well. It appears that all of the material distributed from here has been or will be effectively used in spite of the fact that much of it is not as well suited to our local needs as it should be. The way in which the schools, churches, Scouts, and the numerous other civic organizations have been brought into this activity is indeed encouraging. The essay contest was fully as successful as could be expected in view of the late start. The response of the press in the intermountain region has been fine.

The results of our newspaper work since January 1 are especially encouraging. We have but 145 papers in the District. Most of them are small weeklies. Our clipping service is unquestionably not more than 60 or 70 per cent efficient, and in view of this situation 1,500 linear inches of fire clippings and 3,000 inches of general forest news actually coming to "PR" in five months is a pretty good indication that the public in this territory is getting acquainted with what the Service is doing and trying to do. Our Boise and Salt Lake papers, those having the biggest circulation in the District, have also been the sources of our heaviest returns. * * *

The thing I want to guard against is the creeping in of a feeling that we can relax along this line now that Forest Protection Week is over. We must not do this. The secret of successful public relations work is persistent, steady effort. We must try even harder now with the coming of the hazardous months to keep the thoughts of fire prevention, watershed protection, and the need for sound forest policies in the public mind. During this time of year the press is our best medium for this work. Some time ago I wrote every editor in the District a letter to which the response has been so generous that I know you can count on the cooperation of your local papers if you go after it. Let's do that. This doesn't mean that you should take time from your pressing work to write stuff for the papers. But keep in touch with them. When you get in town drop in on the editor and keep him thoroughly posted on the progress of the fire season, your big administrative and improvement jobs. * * * What some of you have done already is sufficient to convince us that by keeping steadily at it we can use these educational methods with mighty good effects in the solution of our man-made fire problem and in enlisting the public interest which is essential to the adoption of sound management policies for the forests and watersheds of the nation.

For your efforts this year to date we have only commendation and our hope is that we have yet witnessed only the beginning of a big result-getting effort.

Very sincerely yours,
R. H. RUTLEDGE,
District Forester.

A Successful Hunt: Eight wolf pups and one bear were recently taken in Fall Creek Basin. As the Snake River Cattlemen's Association pays $50.00 each for wolves killed on this range, it was a very profitable haul for the hunters.

Permanent Exhibit at State Capitol: A permanent Forest Service exhibit has been installed in the State Capitol building at Salt Lake City by Mr. Scott, assisted by Mr. Crites. A splendid location was secured on the main floor in the south corridor.

Flying Ducks and Swimming Sage Hens: We have known of men taking things which made them act queer, but we didn't know that sage hens and mallard ducks had similar habits. Perhaps Mr. Locke can account for the following incident: On the morning of May 11, as Ranger Bruce, Deputy Game Warden Gordon, and Supervisor Sanford were riding up Stump Creek, they came upon two large sage hens which promptly took to the water. Although Stump Creek was at high water stage, they swam to the opposite side as calmly as though this procedure was quite a regular one. A half hour later a mallard duck flew off a high ridge north of Horse Creek. Investigation showed that she had a nest of ten eggs. Up to this time we had thought that ducks were rather fond of water and that sage hens preferred the dry ridges.--Caribou News Letter.

DISTRICT 5 - CALIFORNIA DISTRICT

Air Patrol Radio: The radio equipment for the fifteen Forest Service stations has been shipped from Mather Field and the operators have been instructed to report about June 15, with the exception of Los Angeles, Orleans (Klamath) and Happy Camp (Modoc).

The stations are: Los Angeles, Santa Barbara, Hot Springs, Northfork, Sonora, Placerville, Alder Springs, Weaverville, Orleans (Klamath), Yreka, Sisson, Happy Camp (Modoc), Mineral, Nevada City and Quincy. In addition the Air Service will maintain a station at Alturas and also stations at the bases (Corning, Mather Field, Visalia and March Field). The Air Service will establish a regular schedule of daily reports by radio to Crissey Field at the Presidio, from which they will be telephoned to Army Headquarters and to the District Office.

Mr. Richard, the Radio Engineer at Mather Field and his assistant, Sergeant Lange, have been busy for several months assembling the equipment and making installations in the planes. During the summer they will spend a great deal of their time in the field, wherever their services may be needed (trouble shooting). A strong effort will be made to maintain 100 per cent efficiency in radio and since the planes will be within communication distance of some Forest Stations at all times the ground forces should receive reports on fires immediately upon discovery. Confirmation reports will be telephoned or telegraphed from the bases and sub-bases immediately after the planes land.

Slash Disposal: The State of California expects to handle the matter of the enforcement of slash disposal on all cut-over lands. They circularized all of the timber operating companies in this State and so far about 500 have indicated that they expect to dispose of their slash this year. There have been but few who have not replied to the requests of the State Forester. Those that do not comply within reasonable time will probably be visited by the newly appointed Assistant State Forester who will devote all of his time to slash disposal inspection.

Exhibit Activities: Our complete exhibit has been in use continually since the school exhibit closed at the Oakland Auditorium in April. It was shown for a time by the H. O. Harrison Automobile Company in Berkeley, next it went to the H. O. Harrison Automobile Company in Oakland, and is now in one of the front windows of the San Francisco Emporium. From here it will be shipped to D-6. Mr. Fair and the painter are now on the Shasta getting the data for the new exhibit layout which we will use next year.

Tractor Saves the Day: "On a fire I had on June 6, at the head of Pine Canyon, which burned over about 500 acres, we pressed into service a Cleveland caterpillar tractor which happened to be near. This tractor was hooked to a plow and set to work making a break around the fire where the latter was making considerable headway in a level stretch of sagebrush. The tractor was kept busy practically all day and plowed a break varying from two to six feet in width, from which we were able to backfire very effectively. I estimate the tractor plowed between two and three miles of break and some of it was pretty rough going, and was worth a gang of twenty men. Wonder if it wouldn't be a good idea to equip each Ranger with a good hill-climbing tractor equipped with a brush cutting attachment."--Jos. Hanf, Santa Barbara.

Summer Mountain Vacations for Sailors: Inland vacations will be enjoyed in the future by the blue-jackets of the United States naval training station on Yerba Buena Island, it was announced recently, when the Western Pacific Railway Company set aside eighty acres of land in the Feather River Canyon to be used as a summer camp for the sailors.--S.F.Bulletin, May 16.

Coast Defence Plantations Inspected: T. D. Woodbury and Dr. Meinecke have lately been inspecting the plantations on the coast defence fort reservations around the Bay at the request of Col. Ira Haynes, Commanding Officer. The groves are made up of eucalyptus, Monterey pine and cypress, and were planted about twenty-five years ago. Needle disease and the pine gall disease were found to be prevalent in the Monterey pine. In general, the plantations are too dense and improvement cutting has been recommended.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Rose Festival Float: The Forest Service entered a float again this year in the annual Portland Rose Festival Parade. There were several hundred floats, costing from $200 up to $5,000, and among these the Forest Service float won an honorable mention (as in 1920). The float represented a radio station in actual operation, a small tent, before which sat a Ranger operator receiving messages, while another Ranger threw out to the multitudes "aerograms" reading as follows:

Aerogram from Forest Protective Agencies

PATROL SHIP, EN ROUTE PORTLAND TO EUGENE, June 9, 1921.

TO THE PUBLIC:

The FORESTS of OREGON are PATROLLED daily by the U. S. AIR SERVICE, cooperating with the U. S. FOREST SERVICE and the STATE, in the PROTECTION of OREGON'S GREATEST RESOURCE. These MEN daily RISK their LIVES for the PROTECTION of the FORESTS from FIRE. YOU can make their work easier and help PROTECT YOUR OWN PROPERTY by ALWAYS being CAREFUL WITH FIRE in the FORESTS.

On each side of the Pierce-Arrow (covered with Douglas fir branches and loaned by Bureau of Public Roads) was a large green and gold sign reading "Forest Fire Radio," with the Forest Service shield and U. S. Air Service emblem at either end. During the parade three of the Army 4 DH's, in connection with the regular air patrol work, "bombed" the city with copies of the aerogram. It is estimated that approximately 200,000 people saw the parade. A flotilla of six U. S. Navy destroyers was in Portland for the Festival and three vessels from the Canadian Navy.

Putting the Stick in Fire Stickers: The D-6 auto windshield sticker--PUT OUT - KEEP OUT - FOREST FIRES has gone East to spread the gospel of forest fire prevention. During Forest Protection Week there were at least 15 cars in Brooklyn, N. Y., that wore the sticker. Now the American Automobile Association of New York City has asked for a supply and agreed to distribute them to motorists planning transcontinental tours. The 150 cars and trucks of the Homeseekers' Caravan, starting from Brooklyn on July 15 for homes in southern Idaho, will carry the D-6 stickers. This unique Caravan brings 128 families from New York to settle in Idaho, and Mr. W. D. Scott, who is in charge, will see that each windshield carries a fire prevention sticker and will issue and enforce forest fire prevention rules for the trip. The above distribution was brought about by Miss Marguerite A. Salomon, of Brooklyn, formerly assistant secretary of the Oregon State Chamber of Commerce and a live Forest Service booster.

Air Patrol: Present plans call for the starting of the Oregon Forest Patrol about June 15, about as carried on in 1920, except that the 1921 patrol will be much more intensive than in 1920. There will be eight planes daily (instead of three in 1920) with 14 observers. No new country will be covered in Oregon, but the patrol will be more intensive. A special air patrol route has been laid out for the Olympic windthrown area from Camp Lewis as a base.

Olympic Protection Plans: Measures for the protection from fire of the wind-thrown area on the Olympic are rapidly maturing. Several trucks equipped with water tanks, pumps, hose, etc., have been received and are on duty. Air patrol has started over the area. Special camp grounds have been laid out where all tourists or visitors will be required to camp. Special permit forms, fire signs, registration stickers, etc., have been printed, all looking toward taking every precaution against a fire being started in the storm area this year. Considerable newspaper publicity has been given to the protection plans during the past few months, since it is essential that the public realize that a fire in that area will be nothing short of a holocaust.

Asher Ireland has resigned after fourteen years in the Forest Service. He was appointed Forest Guard on the Cascade Forest September 3, 1907; in July following, he received his appointment as Assistant Forest Ranger and was assigned to administrative work on the Umpqua Forest. He was transferred to the District Office in Portland in 1912. Serving as a Land Examiner in Settlement and Land Classification work, he was promoted to National Forest Examiner July 1, 1914. He spent three summers, 1916-1918, in the Alaska territory, examining lands on the Chugach and Tongass Forests, after which he was engaged in the same work in Washington and Oregon up to the date of his resignation.

In his varied activities, Mr. Ireland's pleasing personality won for him a warm friendship from all with whom he came in personal contact, and that included practically the entire personnel of District 6. He leaves to engage in the realty business in Portland, and the Service thereby loses one of its most valuable members. We wish you all possible happiness and prosperity in your new work, Asher!

Fire Dope for Newspapers: With the experience you've probably got unloading on newspapers all that Forest Protection Week dope sent you, you ought to be a shark at handing news out to the press by the opening of the fire season. Don't forget that a forest fire, no matter how small, is NEWS to a newspaper. Give 'em a little fire prevention dope along with the fire news. Play up the damage to timber, forage, watershed protection, loss of taxes for schools and roads. The better the public understands what forest fires mean, the more careful they will be, the less fires you'll have, and the easier your fire protection job will be. Think this over a bit.--J.D.G. in "6-26"

Mazamas Plant: A few weeks ago over one hundred members of the Mazamas, the mountaineering club, went to Eagle Creek on the Oregon to stage a tree planting day. Over 1,500 young Douglas firs and white pines were set out on the hillsides near the main camp grounds and along the trail. Mr. Kummel was present and gave the instructions on planting. In addition to planting trees 15 husky Mazamas spent the day bucking up old snags that have been an eyesore for some time on the camp grounds and piled them up so the Forest Service truck could get them easily to haul down into the camp grounds for firewood. A moving picture machine took pictures during the day which will be shown later at various picture houses.

First Fire of the 1921 Season: What was apparently the first forest fire of the 1921 season was discovered on the Siuslaw Forest on May 9. It covered approximately twenty acres and was on the divide between the Siuslaw River and Indian Creek. Needless to say, none of the protective force had been put on on that date.

Mount Fromme, a peak near the headwaters of the Elwha River, Olympic National Forest, was named by the Mountaineers of Washington, on their last annual outing, in honor of District Forest Inspector R. L. Fromme. Since the Geographic Board disapproves naming mountains, etc., after living persons. Fromme thinks that possibly this is a "left-handed" compliment, indicating that he is a "dead one." But we know better.

The Cashmere Valley Record, Washington, issued a special Forest Protection Week edition on May 27. Over 62 per cent of the 12 pages making up the paper were devoted to Forest Service and fire prevention news. One unique feature was the fire slogans run in with the printed matter of every advertisement. This issue of the Record was largely the work of Ranger Lee F. Chartrand of the Wenatchee, assisted by Supervisor Sylvester and State Fire Warden Scholler, the paper for this date being turned over to these men by Editor J. D. Corselius. The entire edition is a splendid example of what hard work and cooperation can accomplish, and the officers of the Wenatchee are to be congratulated.

The Pueblo Flood crept into Montana in the last issue of the Bulletin, but we don't wish the Northern District any such bad luck.--Ed.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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THE RANGER

Many Puebloans have had the pleasure, during the last few days, of meeting a group of men who will go down in the future as doers of deeds--the Rangers that are convening in this city. Many have met them before, on the lonely road, or beside leaping camp fires, and thus had learned to know them for their real worth.

The Rangers are a body of men fast vanishing--the true Westerner, irrespective of the location of his birth. They have the bigness of the out-of-doors they love, and the quiet manner of the mountains that surround them. They are pioneers, guardians, and idealists. As Colonel Peck told them Friday: "The work of a forest Ranger is not highly remunerative. It is a work of ideals. If any of you men expect to attain positions of executive ability with a highly remunerative salary, now is the time to quit our service. The Forest Service is the poorest paid branch of government work."

The Ranger sleeps with danger as his bedfellow and sleeps quietly; a day in his usual existence is more filled with hazards than a year in the life of the city man. And it is this idealism that makes the taking of all as the day's work a matter of enjoyment.

The Ranger is officer, guardian, protector; he is a fire-fighter, woodsman, tree doctor; his backdoor yard covers a thousand acres, and his universe stretches upward with all the pure, clean air of the heavens to fill his lungs.

To meet with them and listen is like reading a wonderful romance of the West; the quiet friendliness and understanding of man and men, unclouded by the darkening glasses of suspicion that is a heritage of the crowded places.

Some day, some western writer will immortalize the Ranger--our Rangers--and he will be one who has lived with and understands them. He will not cast the Ranger as a hero, as we understand the heroes of books, but as a quiet, capable gentleman who can happily live through a life of ideals.--Pueblo Chieftain.

"TO BE OR NOT TO BE"--In Uniform

By Joseph C. Kircher, D-3

For fifteen years uniforms have been discussed and still the Forest Service does not seem to be much nearer a solution of the question. During this time, the sentiment for uniforms has come largely from the field and probably from only a few Districts whose higher officials desired to see Forest officers in clothes which would readily identify them with the Forest Service. District 5 originally took the lead, for there an attempt was made some years ago to make the uniform compulsory. The outcome of this experiment is not known to the writer, although it is understood that not all men in District 5 wear uniforms.

"To Be Or Not To Be"--In Uniform (Cont.)

In District 3 a similar experiment was tried, although the wearing of uniforms was never made compulsory. Some six years ago, however, a standard District 3 uniform was decided upon. The writer remembers the many uniform discussions during 1915. No two men seemed to agree as to details. One wanted riding breeches, another ordinary pants; one leather puttees, another spirals, and so on. Finally, Mr. Ringland, who was then District Forester, decided the question and the field was given the standard uniform. Many Forest officers are still wearing the standard uniform, although some variations are also seen, while other men have never worn uniforms.

The reason for the failure of the D-3 uniform is undoubtedly because its wearing was not made compulsory and because it was not as easily procured as ordinary clothes are.

Later, the Forester's office became interested in uniforms and established a standard, but the wearing of the uniform was not made compulsory, and since this was at the beginning of the war, with its high prices and changing Forest Service personnel, the uniform question was largely forgotten.

Recently, however, talk of uniform has again revived. One hears again the arguments for and against riding breeches or leather chaps or cow-puncher boots or what-not. One hears again the same old arguments of ten years ago, and there appears to be about as many different opinions as there were ten years ago. No uniform will ever please us all, just as the same kind of clothes will not please every one. If they did, all mankind might be wearing "Levi Strauss" or dress suits.

The uniform is not made, primarily, to please the wearer. Its purpose is to allow the public to recognize its wearers as members of a certain organization. The advantages of this are, of course, obvious. To accomplish this, the uniform adopted by the Forest Service must be distinctive in design so that it will always be readily recognized as such. Furthermore, the Forest Service uniform must be suited to the hard service which it will naturally get. If such a uniform is adopted, no member of the Forest Service need complain, even though his favorite style of puttees may not be a part of it. The wearing of this uniform in the field must be made compulsory.

Since field men have argued about the uniform for some fifteen years without getting anywhere, it appears useless to refer the uniform question to the field again. So why not ask the Forester to decide upon a suitable uniform which must be worn in the field, or else let's forget it entirely. I vote for the uniform; what do you do?

(Fly to it, you field men. Let's have some snappy opinions on the uniform question. If you're for it, say so; if you're against it, don't be afraid to come out in the open.--Ed.)

What of the Future?

By E. N. Munns, D-5

One can vividly remember with what awe and reverence he first entered a virgin stand of hardwoods; and the first impressions made upon entering other forests of virgin growth. A search three years ago for the great white and red pine of the Lakes Region was almost fruitless, and the magnificent stands of southern yellow pines are almost a memory. In the hardwood region, the activities of men have taken only the more readily accessible stands, and the gifts of the gods have not yet been entirely destroyed.

We of the West are more fortunate, for the heritage of the past is still with us. In places, devastation has removed our original stand, but cutting is progressing, and with the increasing demands made upon our timber resource, our forests are being obligated for many years ahead. Is it not time to consider these old stands in relation to the people of the future? Can we not afford to select now areas of typically virgin growth to stand as a monument of the past for the people of the future? Is it too early to begin to set aside and protect such areas from cutting or the encroachments of the special use? I think not.

It is true that we have National Parks and Monuments and that some of our States are taking action to preserve natural areas. We are also saving strips along our highways, but a narrow strip does not have the same appearance, the same wild life, that a solid block does. We have no desire to enter into a competition with the Park system, but there are forest types and sites which are not now included in these lands and yet are worth saving, not because they are scenery, but because they are forests. Would it not be a paying proposition to invest a few thousand dollars of our immediate revenue in order to have on a National Forest an area to which we can point with pride and to which we can send the jaded business man, world traveller, or forest student? Would it not be profitable to be able to say, "Here is a forest primeval?"

Such areas need not be large. In some stands a forty would be enough; in others a greater area. In places one might wish to preserve the top of a knoll with its surrounding slopes, or maintain a watershed as a unit. At any rate, the area should be large enough to preserve natural conditions, to maintain wild life of all kinds in a state of natural balance, to include various slopes, aspects, or sites. The type most typical or unique on the Forest should be the one selected, but in order to prevent undue duplication, the needs of the District should govern and one office, probably that of Research, should be made the clearing house.

On such areas, hunting should be prevented where possible, all cutting prohibited, grazing kept to the absolute minimum as far as conditions permit, and no special use privileges should be granted. A public camp ground would not be amiss, nor would special use on adjacent lands be inadvisable, but the stand itself should be free from encroachments and vandalism of all kinds. Present day accessibility is advisable, though not essential, for transportation will develop with our forest activities and may be anticipated. The time to begin thinking about such matters and setting such areas aside is now upon us while we still have them, while we are preparing policy statements and management plans, and before our stands are obligated beyond redemption by entangling alliances. Only by present day action can we really assure the future of a glimpse of the glories of the past.

Fighting Fire With Rocks

By Paul D. Kelleter

"Hitch Your wagon to a Star" no longer holds on the Modoc Forest in California. Supervisor Durbin substitutes a modernized version. He says: "Hitch Your 'Tin Lizzie' to Lava Rocks"; and, what is better, Supervisor Durbin has the faith and sets out to prove it.

In getting down to earth Supervisor Durbin explains his road drag for building fire lines. He uses the common rough jagged lava boulders, more plentiful on the Modoc than trees. The rocks are about 24x30 inches and about 1 inch in thickness. The superiority of the two rock drag over any other style is that it will dig down into small depressions that a log or anything else will skip over. To be effective, two rocks must be used. One will not do the business. Supervisor Durbin tried the drag last summer on the Shasta along secondary roads and was able to clean them at the rate of three miles per hour. In using this method of building fire line control it is necessary to have a couple of men follow behind the drag to throw out debris that may be left in the trail. On the strength of his experience last summer Supervisor Durbin estimates that where this system can be used a truck driver with two follow-up men can build back fire line trail as fast as ordinarily could be done by 25 men with rakes and shovels. The one-ton Ford truck proved superior to heavy trucks for this work. In constructing trails through yellow pine reproduction a couple of men were sent ahead to clean out the young growth and logs in order to let the drag work its way through. It is the intention to drag all secondary roads within the Forest during the coming season and it is estimated that this work can be done at the rate of 20 miles a day.

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Ranger Bill Says:

You'll find most of the men who think for themselves and act for all the rest at the top of the ladder.

Ranger Nat Forest is puttin' in a lot of extra work on the Summit Lookout trail--says the lady observer.

Knowin' six ways of "shootin' biscuits" and cookin' "mulligan" aint worth near as much to your health as a little "savey" of balanced rations.

Efficiency, the Grand Passion

Efficiency is the art of doing something better than somebody else can do it if you can kid yourself into believing it.

An efficiency expert is one who can save the office almost enough to pay his own salary.

Two men milking a cow, one on each side of the cow, is efficiency, even though the cow gets peeved and kicks the milk over. Even though the milk is a total loss, the thing has been done efficiently.

Firing the old bookkeeper who has been on the job for years and installing three men and two adding machines in his place and opening up a set of books that nobody but the efficiency boys can understand is efficiency in its highest form.

But there is no doubt that efficiency is the grand passion. It is a great thing to have around an office. There are some simple rules which must be followed to get the efficiency bug working successfully. Here are a few of them:

Save all the lead pencil sharpenings. The wood alone amounts to a good bit in the course of ten years, as it can be made into paper. The sharpenings can be saved in a copper receptacle with cover, which costs $28.00. In course of ten years $1.35 worth of sharpenings can be saved.

Use both sides of the carbon paper. This may be a bit difficult at first, but one can manage it. Have you not often noticed that one side of a piece of carbon paper becomes frightfully dull after it has been used for some time? Just turn it over and see if you can or can not make a copy in that way. True, the copy will be on the back of the same piece of paper which contains the original, but what does that count when efficiency is concerned?

You will notice that along the edge of every sheet of postage stamps you buy there is a blank strip of paper. Save these strips. In ten years you will have quite a number of them and paper is valuable.

Never have revolving chairs in the office, but four-legged, straight-back chairs. When a man is sitting in a straight chair, he never turns from his desk, but keeps his mind upon the job at hand. In a swivel chair he is constantly turning this way and that. He may be a good employee in all other respects, but the temptation to take a free ride every few minutes is too great.--Clipped.

Record Timber Sale

The largest timber sale negotiated in the United States in a number of years by the Forest Service was made on June 2nd, when District Forester Redington, with the approval of the Forester, awarded 697 million feet of timber in the Sierra National Forest, California, consisting of western yellow pine, sugar pine, white and red fir and incense cedar, to a San Francisco lumberman. The bid prices per M are western yellow pine $3.00, sugar pine $4.25, white and red fir $1.50, incense cedar $1.50. A price of 50¢ is also fixed for unmerchantable material removed at the option of the purchaser. The purchaser has a two-year construction period and a 23-year operating period fixed in the agreement. This sale will also make possible the removal of about 700 million feet of privately-owned timber. An initial investment of approximately 3½ million dollars is required for development, especially the construction of a standard gauge railroad to open up the area which has hitherto been inaccessible for logging operations. A provision in the contract will secure the use in an equitable manner as a common carrier of the portion of this road which will later be utilized to remove additional National Forest timber. Since the timber involved in the sale is mature, and has been subject to recurring insect infestation, its sale at this time, together with the general opening of the area, is considered very desirable.--C.G.S.

Far, far beyond the busy mart,
I know a virgin wood
That beckons strangely to my heart
To share its solitude.

It signals me to worship there
The God that made all things,
To lay my yearning spirit bare
To rest with folded wings.

Its spires point toward the sun,
Countless from every slope;
Their tolling leads me on and on
In quest of faith and hope.

Its entrance guard no studded doors,
Although 'tis sacred ground,
And footsteps on its mossy floors
Awake no echoing sound.

Its living aisles lead everywhere
To altars grey and old,
Where you may pause in silent prayer
And let your heart unfold.

Its swaying canopies by day
Are pierced with boundless blue,
And night through them in vast array
Reveals her orbs to you.

Aeolian undertones enhance
All tuneful melodies;
A silver-throated choir chants
Amid its galleries.

There at the day's awakening,
Each chalice drips with tears,
To live anew, and trembling cling
To nature, cleansed of fears.

To worship in this House of God,
No soul was ever late;
Whether philosopher or clod,
He finds an open gate.--Hans N. Kleiber, Bighorn.

WASHINGTON NOTES

Small Arms and Ammunition Manufacturers are beginning to get behind the fire publicity game. The Remington Arms Company and the U. S. Cartridge Company are already packing fire prevention insert slips in their cartridge boxes, and the Peters Cartridge Company is now investigating the cost and practicability of using such inserts. The Society of American Manufacturers of Small Arms and Ammunition, New York City, has also taken up the matter with its 17 constituent organizations, and it is hoped that before long a large number of the big cartridge companies will be cooperating with us in fire prevention work.

Letchworth Park, near Castile, New York, has been selected for the midsummer meeting of the New York Section of the Society of American Foresters, to be held August 16-17. The following subjects will be discussed: (1) The free tree act of New York; (2) Suggestions for consideration by the U. S. Chamber of Commerce Committee on a National Forest Policy; (3) Minimum silvicultural requirements--U. S. Forest Service; (4) Pulpwood production on cut-over lands.

WASHINGTON NOTES (Cont.)

National Forest Receipts for the period July 1, 1920, to May 31, 1921, show a total decrease of $1,796,866, as compared with the same period of the preceding fiscal year. Of this total, $1,689,104 is chargeable against deferred grazing fees.

DISTRICT 1 - NORTHERN DISTRICT

Tourist Guide Map: A large billboard map was recently prepared for the Missoula Tourist Camp Ground by the Office of Engineering. The Missoula Chamber of Commerce rendered valuable aid to the Service in providing materials for the map and having it suitably placed.

The map itself is about 7 x 10 feet in size, and covers the central and western parts of Montana, northern Idaho, and a small strip of eastern Washington. The ground color of the map is cream, on which the National Forest areas are shown in green. Rivers, streams and lakes are shown in blue. The principal cities and towns are boldly lettered, with the connecting roads delineated in bright red. Distances between points are given in red figures.

Large circles in each lower corner bear respectively the slogans, "Keep the Forests Green and Streams Clean," and "Be sure your camp fire is out," while a special appeal is made, in prominent lettering, near the bottom for tourists to protect the forests from fire.

The map is mounted between two white pillars of attractive design, and is illuminated at night by a flood light.

During the summer cars from practically every State in the Union stop here. From June 1 to 15, this year, 733 tourists have registered.

Ranger A. J. Riggert, of the Missoula Forest, recently showed himself a man of few words. Having seen a man get out of a car immediately ahead of Riggert's party and bring a dead chicken out of the brush, Riggert accosted him, saying:

"Guess you'd better give me that chicken."

"What for?" parried the man.

"Evidence!" came the laconic answer.

"$50.00 fine," said the judge, the next to take a part in the conversation.

A. A. Campbell, a scaler on the Mann Lumber Company sale on the Lolo Forest, scaled 50,000 logs, totaling eight million feet, in a period of four months and seven days. All logs were scaled on the cars as they were loaded from a pond fed by two flumes. This accomplishment requires a man with an active mind and limber feet, who is working at all times in a place of considerable danger.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Cochetopa Headquarters Moved: The Cochetopa headquarters, after much discussion with the citizens of Saguache, has been moved to Salida, reaching there just before train service with the outside world was cut off by floods.

Fire Danger Slight: Continued rains, still general in Colorado and Wyoming, make fire danger very slight; a promise at least of a late opening of the fire season.

Pueblo Flood Investigation: Messrs. Wheeler and Johnson of the District Office, and Bates of the Fremont Experiment Station, have been making observations on the influence of the forest in retarding the flow of water during the recent flood around Pueblo, and also the influence of the lack of forest cover in increasing the volume of water and the rapidity of flow. It has been determined that the water which caused the great damage in Pueblo originated in the rolling country, west of this city, which is either treeless or contains a scrubby growth of pinon and juniper. The heavy rains which started about the middle of the afternoon of June 3, resulted in the flood stage being reached in Pueblo between 9 and 10 that evening. The total precipitation, during the flood period at Pueblo, was 6.15 inches, of which 1.94 fell up to midnight of the first day.

The rainfall was even heavier in the mountains, as is instanced by the record taken at Minnehaha, about three miles west of Manitou, where 7.85 inches are recorded for the storm period. Of this amount, 4.64 inches fell up to 10:30 on the morning of June 4. The ground in the mountains was thoroughly saturated with moisture because of the three feet of snow which occurred about the middle of April, which month had the highest precipitation recorded during the past twenty years. Despite the saturated condition of the ground, the flood stage was not reached in Manitou until the afternoon of June 5, and Fountain Creek, which originates in this region, also did not reach its flood stage in Pueblo until the same afternoon.

On Middle and East Beaver Creeks, which head on the Pike Forest, erosion is not so bad as on West Beaver Creek, which flows almost entirely outside the Forest and through the region which was devastated of timber 20 or 30 years ago during the Cripple Creek mining boom. On West Beaver Creek, one reservoir burst its dam and several others were wrecked, while below the junction of the three Beaver Creeks the Schaeffer reservoir went out on the afternoon of June 5, causing the second flood in Pueblo.

The preliminary conclusions are, that if it had not been for the influence of the forests, instead of the high water stage being reached at 10 o'clock on the night of June 3, there would have been a steady rise of water until the morning of June 4, which would have wiped out most of the city of Pueblo and would have devastated a much larger area of the Arkansas Valley.

Publicity, A Trading Asset: Airplane fire patrol in the Pikes Peak Region is being done by the Western Aircraft Company of Colorado Springs under an agreement which calls for constant lookout for fires during regular trips and special trips to locate smoke at the request of the Forest Service.

This patrol does not cost the Service a cent and may cost the Aircraft Company considerable, if many special flights are necessary. Mr. H.A. Hamilton, President of the Company, who seems to be a plain, cold-blooded, business man, has considered this possibility. He does not expect to charge the expense to philanthropy: he is very frank in stating that the publicity which he will get is of the quality which he can not buy, and worth every cent it may cost him. We are trading press agent work for fire patrol.

His pilots are appointed special (unpaid) fire guards, provided with maps and telephone directories of Forest officers, and the Lincoln-Standard planes bear on their sides, in neat letters, "Official Forest Service Patrol."

DISTRICT 3 - SOUTHWESTERN DISTRICT

More Good Fire Cooperation: "On May 26 a cooperative agreement was entered into with the Redondo Development Co., who held a 50-year reservation of the timber on the Baca Location No. 1, when it was sold a few years ago to Frank Bond. They agree to pay one-half of the salary of the Cerro Pelado Lookout and foot all of the expenses incurred by the Forest Service in extinguishing fires on the Baca Location. On the other hand, the Forest Service has full charge of the Lookout Man and will of its own initiative assume charge of all fires discovered on the Grant until relieved by employees of the Grant Owners. A somewhat similar agreement will be entered into for the Ramon Vigil Grant as soon as the brush from the recent tie slashing is disposed of. Mr. Bond has agreed to put the cutting in safe condition."

Former Assistant Forester Here: William L. Hall, formerly Assistant Forester in charge of Acquisition, now of the firm of Hall, Kellogg & Co., Chicago, is spending several days in Albuquerque in the interests of land exchange.

Where is the Profit? One hectare of land is equal to 2.471 acres. In 1913, the forest area of Germany was 3,039,618 hectares; 118,300 hectares or about 295,750 acres, of forest land were lost during the war. This is undoubtedly a serious national misfortune to Germany, but we of the United States during the period 1916-1920, inclusive, burned up 56,488,307 acres of our forested area.

Calkins a Rescue Hero! Two Indian girls, who are employed as maids by Soldier Camp summer home residents, became lost in the Catalina Mountains last week and wandered about without food or shelter for three days. Several searching parties, including two deputy sheriffs expert in mountain experience, and two parties of Yaqui Indians versed in trailing, sought diligently for the maidens but Supervisor Hugh Calkins of the Coronado found them in Sabina Canyon, several miles from Soldier Camp, on Saturday. The girls were little harmed by the hardship, although their only sustenance while they were lost was the very small lunch which they had taken for just an afternoon in the timber.

Puppies Cultivate Acquaintance of Wolf: "Now comes Mr. Hugh L. Hodge of the Diamond Bar Cattle Company with the following 'nature story'. A few days ago a number of hound pups were noticed playing at the edge of the timothy field at the Diamond Bar Ranch. Owing to the high grass it was difficult at first to see from the ranch house, just what the pups were playing with. Then it was noticed that a full grown lobo wolf was the pups' plaything. A Winchester was secured from the house and the wolf was shot by Mr. Inman, a Biological Survey trapper--one of the largest lobo wolves ever taken from the Diamond Bar range."--Gila Bulletin.

Mexico Plans For a Future: A bill has just been introduced in the House of Representatives of Mexico by the Department of Agriculture and Promotion for a Forestry Law. The principal purpose will be the protection of the forests of Mexico, as they are necessary for the maintenance of the climatic and economic balance and to prevent the disintegration of the soil and to conserve the water supply of the rivers and subterranean streams.

The bill was drawn up because of the immoderate, ignorant and criminal cutting and destruction of Mexican forests for lumber, for use of the land or merely for the fun of it.

In addition to the purpose noted, the Forestry Law is also for the protection and planting of city trees, and along roads, river banks, and public places, as well as for regulating the exploitation of the Mexican forests.

The Flag: It is believed that the question of proper disposition of wornout flags is one that is not properly appreciated in all cases. Whenever a flag is worn out or damaged in any manner to render it unfit for use as a National emblem, it should not be put to any other use, but should be carefully destroyed, preferably by burning.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Cooperation with Park-to-Park Association: Mr. Rutledge has returned from the Park-to-Park Highway Convention held in Salt Lake, which he states was a very interesting one. At the convention Mr. Rutledge spoke on the relation of National Forests to the parks and to the Park-to-Park route, also bringing in the matter of fire protection. The Association is very appreciative of what the Forest Service has done and is doing in making the Forests accessible along the route of the Park-to-Park Highway, and they are with the Service to the limit in fire protection and prevention. The Association is also back of road legislation which will continue the appropriations and especially those in the National Forest States.

Excellent Feeding Year Anticipated: Vegetation on the Forest is growing rapidly and this promises to be one of the best feeding years which this country has ever known. Stock are going to the Forest ranges in better shape than usual, and all indications now are that they will be fat before fall. Sheep shearing is in progress at practically all of the shearing corrals in this vicinity.--Caribou F.S.Notes.

New Fire Stamp on Wyoming: The following extract is taken from the Cokeville Register:

"A stamp bearing the Forest Service shield, 'Put Out Your Camp Fires,' and 'Bridger-Wyoming National Forest,' suggested by Ranger Dunn, has been adopted by the Supervisor and has been made in quantity and each Ranger of the entire unit will stamp all official documents that go through the mails during the fire season.

In addition, Ranger Dunn has made arrangements for the stamping of a large number of envelopes for each business house in Cokeville with the fire slogan.

Insect Investigation to be Made on Kaibab: News has been received that Mr. Edmonston and Mr. Hofer, representatives of the Bureau of Entomology, will go to the Kaibab some time in July for the purpose of making a study of the insect infestation problem on the Kaibab.

Supervisor Mains Presented with Car: Mr. Simpson learned from an Austin newspaper while on the Toiyabe that the people of Emmett had presented Supervisor Mains with a Buick touring car in appreciation of his efforts in connection with the Black Canyon reservoir. It appeared that he had been very influential in getting the project through. One of the people in town took Mr. Mains and his family out for a ride and upon their return they found a large crowd of people on their lawn gathered about the new car which was decorated with flowers. Then a speech was made by one of the men presenting the car to Mr. Mains.

Fishing Season Begins: Ranger Murphy was visited by a motorcycle, two automobiles and 17 people looking for the best place to catch fish. It is a daily occurrence to see autos loaded with fishermen, and they all return home with a disappointed look on their faces--the water is too high, and "fish no bite." --Wyoming Wizzard.

DISTRICT 5 - CALIFORNIA DISTRICT

Many Bills of Interest to Foresters were passed at the recent session of the California legislature. Two of them, which have not yet received the signature of the Governor, are of great interest. One provides an appropriation of $15,000 for continuing the work of the John Muir Trail. The other appropriates $300,000 for the purchase of stands of redwoods along the State Highway on Eel River in Humboldt county.

Deer on California Forest: On a recent week's trip through the northern portion of the California National Forest, made by the District Forester and Inspector of Grazing Nelson with Deputy Supervisor Mace and Ranger Douglas Robinson, 100 deer were seen despite the fact that no care was taken to decrease the noise of the travel of men and horses. Evidence of deer was everywhere. The largest number seen in one day was 35 and the largest in one bunch was 11. The District Forester and Deputy Mace were able to get within 30 to 40 feet of two deer and attempted to shoot them with the camera, but results were poor. The species of deer which is found on the California is the Columbian Black Tail--whose range is limited to northwestern California. Deputy Supervisor Mace asserts that there are 40,000 deer on the California Forest, which has an area of slightly over one million acres.

Motor Vehicle Inspectors: Messrs. L. A. Barrett and S. W. Wynne have been designated as "Motor Vehicle Inspectors" for this District. They will go into the matter of the proper upkeep and use of all motor vehicles on all Forests visited by them where such equipment is in use, and will advise the proper Forest Officer in writing of abuses needing correction.

DISTRICT 5 (Cont.)

Inyo Rangers "On the Job": An item from the Big Pine newspaper mentions the excellent work that was done by Rangers Cranston and Hotelling in assisting local citizens in the construction of a public camp ground for automobile tourists in Big Pine. Practically the entire town suspended business operations and had a picnic and work day cleaning up the area and constructing improvements. The development of a good public camp at Big Pine will materially assist the Forest Service in caring for the heavy summer recreation travel to the Inyo Forest.

Cooperation: Last year the Board of Supervisors of Modoc County purchased 40 acres of land in Alturas and donated it to the use of the Forest Air Patrol as a landing field. This spring a rodeo association was formed in Alturas, which purchased an additional and adjoining 40 acres to increase the size of the field. They are planning a big three-day celebration, July 2 to 4, to raise money to cover the cost of the purchase of this land and putting it in condition.

Yreka voluntarily secured a field and offered to make any improvements necessary as an inducement for the establishment of a base or sub-base at that place.

Corning is furnishing a field and barracks for the men, including an office, storeroom, sleeping quarters, shower baths, etc., with electric lights and city water connections. All the business houses in town closed May 11, and everybody went to work on the field and barracks. The ladies of the town provided dinner at the field, and by night the job was done and a dance was held on the barracks floor.

Visalia is furnishing a field and is building barracks similar to those being furnished at Corning.

Porterville, Chowchilla and Merced have offered to furnish landing fields and buildings if patrol bases are established at those points.

New Exhibit Background: Frank J. MacKenzie has almost finished the work of painting the new exhibit background and has done a very creditable work. The scene, which is 10 feet high and 30 feet long, shows a forest scene before and after fire has devastated it. On one side is the cool attractiveness of the forest bordered by a fire line, on the other side of which is the blackened desolation which fire spells. In the background is Mt. Eddy crowned by a play of light and shadow as the storm clouds drift across her snow-covered summit. The features of the foreground in the painting will be continued out in the actual foreground and the way Mr. MacKenzie has matched up the real objects in the painting make the observer feel he can pick the bushes and trees and charred snags off the canvas.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Quick Work: Captain Martin, proprietor of the Log Cabin Hotel, Lake Crescent, in the windthrown-timber area of the Olympic, is still scratching his head over the quick action by the Forest Patrol planes.

The report came into the local forest officers that Martin was clearing a small patch of brush on June 20 to make room for more cabins at his hotel site, and had set fire to a lot of green boughs, which resulted in a flash fire. One of the Government planes, on its forest patrol route, flying high overhead, circled three times over Martin's burning brush. A wireless message went in to Camp Lewis giving the location of the smoke, which message was immediately relayed by land wires and in just one hour a forest ranger was alongside Captain Martin asking him why the fire.

Considering the fact that the Ranger had to travel several miles to reach the Log Cabin Hotel, this was considered pretty quick action by forest officials, and they express the hope that as quick action can be taken on all other smokes that may be reported in the devastated timber region of the Olympic Peninsula during the coming dangerous fire season.

Scenic Films: Robert Bruce, of the Robert Bruce Educational Films Corporation, is now in this District on his fourth trip filming some of the scenic features of the National Forests. Mr. Bruce is especially anxious to get some motion pictures of a forest fire and has asked Forest officers to inform him at once when such opportunity arises. We'd like to cooperate with Mr. Bruce, but we hope there will be no good opportunity this year!

Chance for Cooperation: Mr. Thos. B. Hill, Director of the Washington State Development Bureau, of the Chamber of Commerce, Seattle, recently asked for a complete list of Forest Supervisors and their addresses in the State of Washington. Mr. Hill stated that "the Scenic Resources Committee" of the Bureau is desirous of promoting the use of the National Forests for camping and recreation purposes.

Putting Force Into Law Enforcement! On May 19, almost the anniversary of the offense, the Federal Jury in Portland brought in a verdict of guilty against one Lorenzo E. Dole, a timber locator, for maliciously setting a fire within the Siuslaw Forest on May 16, 1920. He has long been suspected of setting fires and efforts have been made year after year to get the goods on him. His method of work was original and only an unusual combination of circumstances brought about his conviction. It seems that by long practice he could flip a burning match into the brush along a road or trail even from horseback. He tried this on May 16, 1920, but there happened to be some one watching him through a telescope, with the result that he is now awaiting sentence.

A "Goldfish" Breakfast: The Progressive Business Men's Club of Portland recently staged a salmon breakfast at the Eagle Creek camp grounds on the Oregon for 800 delegates attending the mining convention at Portland. Luck was with them, as the day was a perfect one and a good time was enjoyed by all. Many took the trip uo Eagle Creek trail as far as the Punch Bowl, a distance of 2½ miles.

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THE OTHER FELLOW

By H. I. Snider--Cleveland

The more one works with the Forest Service, the more one realizes what the word "Service" really means to the people, and the opportunities there are for a Service man to really be of genuine good to the world.

A Ranger has all kinds of people to serve, from the millionaire and his poodle dog to the man who has only money enough to buy the necessary gas to take his family of ten (more or less) for a day's outing with the flivver steaming up the hills to that restful spot "somewhere" in the mountains. To give the kind of service needed to satisfy all comers and residents, certainly requires tact and a full understanding of human nature to realize just how to handle individually and collectively the various problems that arise.

To do that, it seems the best way is to place yourself theoretically in the other fellow's boots for a short time, just long enough to realize what he really wants and how he feels about it. The proposition he puts up to one may look out of reason at first, but one soon begins to see his side of the question, and realizes that we are all human and each human has some particular idea to bring to a conclusion before he is satisfied in this world. A Ranger has about as many of those ideas to help bring to a conclusion as any man living, and it is the bringing or helping to bring those ideas to a successful conclusion that spells service to the people.

In this age when there has been and still is so much unrest in the world, giving satisfactory service to the people is surely living in accord with Nature, exemplifies a religion in action, and beats preaching all to thunder.

How To Handle Motion Pictures

by C. A. Lindstrom, Washington

As our supply of motion picture films is increased and motion picture projectors are acquired, it will be necessary for members of the Forest Service to familiarize themselves with their use. Every Forest officer should secure a copy of Department Circular #114, which lists Department films and explains briefly their care and use. A good article on the subject appears in the May issue of "Moving Picture Age." The following digest of it, with some additions suggested by our needs, is furnished for the information of forest officers.

A motion picture film is a thin, fragile strip of celluloid 1-3/8 inches wide upon which are printed sixteen pictures per foot. There are about a thousand feet on a reel. Two kinds of stock are in common use: the nitrate of cellulose (inflammable) which predominates, and acetate of cellulose (slow-burning).

Nitrate stock is highly inflammable, but it is not explosive. It will catch fire from open flame or great heat, and should, therefore, be kept in metal containers properly insulated. Under no circumstances should film be handled by a person who is smoking, and it is unwise to place it near a fireplace, stove, gas jet or oil lamp. Care should be taken in transferring it between container and projector.

Inspection Before Showing Pays: Film that has been in use comes rewound, yet rarely ready for the projector, as the last operator usually ships it just as it comes through the machine--with the end of the reel on the outside. Every reel should be rewound slowly, and every foot should be examined for poor, harsh, dry and improperly made patches, tears, broken sprocket holes, and other imperfections that may have accumulated during previous use.

Winding the emulsion (dull) side out, the film should be grasped between the left forefinger and thumb with just enough pressure to slightly cup the film. It is possible to detect every broken sprocket, tear and patch if rewinding is done slowly.

A broken sprocket hole should be cut as indicated by Fig. 1. The defect may pass through a projector perfectly without repair, but the probabilities are that one part will catch on the idler, tear the film, and otherwise damage it, which would necessitate stopping the machine.

How Repairs Are Made: Film sometimes breaks, even when handled carefully. The repair is simple, and poor patches are inexcusable, yet possibly half the film troubles are due to poor patches. To make a patch cut the film as shown in Fig. 2, leaving a stub "A" from 1/8 to 3/16" long. End "B" should be cut exactly on the line dividing the pictures. Scrape every particle of emulsion off end "A" to the line dividing the pictures, and thoroughly scrape celluloid side of "B" an equal distance back, using a sharp knife or safety razor blade.

Fig.1

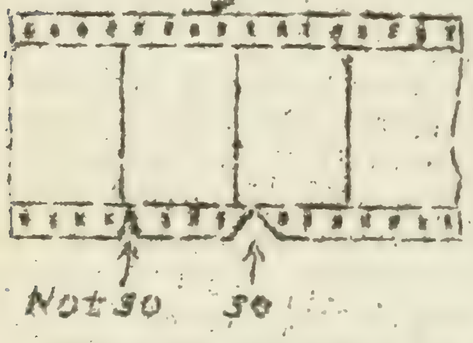
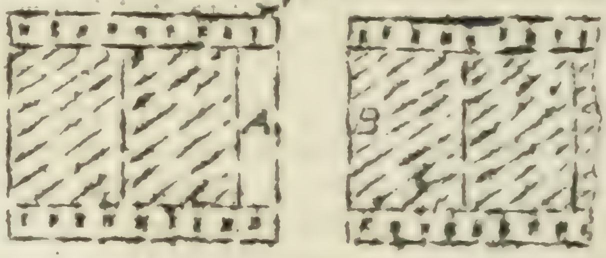


Fig.2



The next operation is equally important. Place both ends together so that the sprocket holes exactly match, with emulsion side of both ends either up or down, that is, on the same side. Grasp one edge firmly with thumb and finger and apply film cement to the other and clamp it down tightly with thumb and finger of other hand. Release the opposite edge and repeat the operation, clamping both sides firmly for about five seconds, and the patch is done. Be sure that sprocket holes exactly match, and that the frame line of one end coincides perfectly with the frame line of the other. All surplus cement must be wiped off. The work must be done very rapidly. Partially dried cement loses its holding qualities.

Film should be kept in a cool, damp place. Heat and dry atmosphere make film brittle. A blotter moistened with a solution of eucalyptol, glycerine, camphor and menthol, placed in the film container, is said to improve brittle film. Sometimes a blotter dampened with water will prove advantageous, but great care must be taken to prevent water from coming in direct contact with the film, as it will soften and loosen the emulsion.

Before every exhibition the projector should be cleaned and oiled. Excess oil should be wiped off. If it comes in contact with film, particles of dust will accumulate and aggravate "rain streaks" later. Should oil accidentally fall on the film it may be removed by a soft, lintless cloth. Frequently a wool-like substance accumulates in the aperture, making an unsightly appearance on the screen. This should be wiped out after each reel is projected. Sprockets may accumulate considerable dirt. A stiff toothbrush or typewriter brush may be used to remove it.

What Causes Scratches: The entire film tract should always be kept free from all dirt accumulations. Rollers in the magazines and idlers, particularly those touching the emulsion side of the film, should be examined to see that they are working freely. Any drag will induce unsightly scratches, and scratched film is practically worthless. Felts sometimes used as fire guards at the openings of the magazines must be cleaned frequently.

After the operator is assured that the machine is in perfect order, he may insert the film so that the emulsion side is toward the light at the aperture when the machine is threaded. The sprocket teeth and sprocket holes must mesh perfectly before the idlers are pushed into place. Amply large upper and lower loops should be made, but not so large that the film surface will strike the housing. If the loops are too small the sprocket holes will be torn and the film will break. Enough loop should be allowed to permit freedom of motion.

The tension on the take-up reel sometimes causes trouble. If it is too loose, the take-up reel will not turn and the film will pile up and invite disaster.

Where the projector will permit, it should be started slowly and then speeded up to normal, which is one foot per second. After the film is in motion the light may be thrown. If the focus has been adjusted and the picture properly framed before starting, the effect will be pleasing. Most portable projectors have fire shutters which fall between the light and film when the motor stops. This should not be lifted with the light on or the film will ignite. A few projectors are now on the market which can be held indefinitely on any scene in the film.

If a break should occur in the film, the ends may be fastened temporarily by use of wire paper clips, which do not injure the film, nor the inspector in case his hands strike them during the rewind. The use of pins for this purpose is dangerous.

Reel bands should be firmly and securely fastened around every reel. Where film is used on a circuit each exhibitor is honor bound to ship the film to the next operator in as good condition as it was received. In fairness to the men who follow, every operator should repair any damage done while the film is in his possession. Common courtesy requires this.

Film must be shipped in accordance with Interstate Commerce Commission specifications. Every package must be plainly marked in large letters "Motion Picture Film," and the package must carry a new yellow caution label every time it is shipped.

Picture projection should never be attempted by any other than a careful man. A projector is not a toy; motion picture film is not foolproof, and a school or church may better do without pictures than suffer incompetent operation.

Winter Killing in Western Yellow Pine

by G. A. Pearson, Fort Valley Exp. Station

The past winter was trying on western yellow pine reproduction in Arizona and New Mexico on account of deficient precipitation, especially snowfall. Normally the ground is covered with two or three feet of snow from December 1 to April 1, but this year it was bare during the greater portion of the winter.

On the Sitgreaves National Forest, where reproduction is exceptionally good, seedlings and saplings were reported to be dying in great numbers early this spring. Examinations in June, however, have shown that only the leaves are dead, since new shoots are coming out even on the most seriously injured specimens. The explanation of this phenomenon is that water has been transpired by the leaves faster than it could be replaced by the roots. This probably occurred during the winter when the soil was frozen. At such times the moisture in the soil is unavailable to the roots, but on sunny days the leaves may give off considerable amounts of water vapor. Usually in this region, winter killing is confined to the larger seedlings or saplings whose tips protrude through the snow. This year even the smaller seedlings were injured; but they were probably saved from total destruction by the fact that they were protected by a light snow cover during considerable periods.

King Spruce

"Wilderness, Lord of the olden time,
Stalwart and stately pine,
They have dragged you down to the roaring town
From the throne that once was thine.

"And you who have reigned in the pine tree's stead
Can hope for no stay or truce,
For the axe and the saw and the pulp-mill's maw
Have doomed thee, too, King Spruce."--Clipped.

Overselling Recreation
By Frank A. Waugh

In the June 6-20 issue of the Service Bulletin W. H. Friedhoff has spoken a very sane and significant word regarding the danger of overselling recreation. This is a danger which, though very real at the present moment, ought to be easily avoided in the Forest Service. The whole policy of the Service is founded upon the idea of conservation, meaning of course conservation for eventual use. But this policy has been so thoroughly drilled into all members of the organization that everyone readily understands how the present rapid exploitation of resources endangers the future, and everyone is accustomed to the principle of saving now in order to supply a greater harvest in the future when a greater need will certainly arise.

The principle applies to recreation just as fully as to timber supply. The need for forest recreation will be more than doubled when our population is doubled, and our forest recreation resources will certainly be diminished in an inverse ratio.

The practical inference to be drawn from this principle is that we should be very slow in selling our forest recreation, and especially in tying up any of our resources in any manner whatever. The danger of overselling summer home sites pointed out by Friedhoff seems to be especially serious, since it establishes a semi-permanent equity in the interest of individual persons. These interests are established upon the most desirable sites in forest. It is entirely conceivable, and even probable, that at some time in the not distant future such areas will be seriously needed for public recreation. In other words, they will be in demand for a higher form of use, and unless we leave ourselves and our successors free to satisfy these higher uses, we have lamed our whole administration.

Speaking in still more general terms, I do not feel at all anxious to "boom" forest recreation by advertising it widely, or to urge large numbers of people into the forests at the present time. The point at which we ought to have the greatest anxiety is to see that our forest recreation is founded upon absolutely sound social, economic, and engineering principles. Our administration of the forest with reference to recreation ought to be slow, sure, and safe and particularly careful in its protection of the future.

Do You Know 'Em by Their First Names?
By P. A. Thompson, Colville

Haven't all you FO's undergone this same experience at some time or other, probably under varying conditions and surroundings but still about the same?

Last week my Dad paid me a few days visit. [illegible] Dad is not particularly inquisitive but has the natural interest possessed by most Americans about the great outdoors--flowers, shrubs, trees, and their values for grazing, lumber, and what not. He accompanied me on an inspection trip to a couple of small timber sales and was much interested in low stumps, lopped tops, brush burning, selective marking, cycles, etc.. On the tramp from one sale area to the other he began to ask questions about shrubs and grasses growing along the trail. What was this, and this, and that, and that, what were the common names, the scientific names, were they palatable for sheep, horses, cattle, what was their relative forage value, and so on.

Do You Know 'Em By Their First Names? (Cont.)

Every tree, shrub, and forage plant was familiar to me, but I stuttered and stammered over the names of a good many of them. In fact, I missed so many that I felt like the fellow at the foot of the class at a spellin' bee. Good old Pseudotsuga taxifolia and Thuja plicata and Larix occidentalis and some more of the familiar ones gave me a chance to display my knowledge and mitigated somewhat the mortification.

But I resolved, inwardly, to improve my knowledge of forest botany immediately. While at the Supervisor's office later I searched the library for a volume which would furnish the necessary information, but with no success. It may have been there had I been well enough versed in botany to have made use of it, but my cry is "PICTURES," more pictures in your botany textbooks in order that we poor two-year college, or short-course Rangers can understand 'em. I'd dig up five simoleons to-day for a book containing a clear, understandable description and pictures, especially pictures, of the weeds, grasses and shrubs growing on the National Forests of District 6.

The Service Bulletin of April 25, 1921, contains an article "National Forest Botanical Gardens," by A. H. Carhart of D-2. I'm"for" that idea as he describes it, all the way through. And I'm willing to devote some Sundays, if necessary, to the construction and planting of his Botanical Garden, or trail, or in whatever form his idea is eventually worked out. The idea itself is great.

Photographs Wanted

New Forest Service inventions, close up, with descriptions.
Camp site improvements--tables, benches, shelters, cooking fireplaces, with people actually making use of them.
Large planting crews at work in the field.
Fishing scenes with trout, etc., (not dead ones) actually being caught.
A good bunch of range cattle with a forest setting--Round-ups preferred.

Forest fires, and crew working on fire line.
Heavy stands of timber, close up as possible.
A good-sized pack outfit on the trail.
Devastated fire areas.
A selection cutting sale area, showing thinned forest, logs on skids and piled brush (Hard to get).
Scenery par excellence, without people in the picture.
Airplane patrol pictures, showing "ship" over forest, and a fire from an airplane, with wing or other part of machine in view.
Wasteful lumbering.
Wild life--if you can get 'em.
Women lookouts, on duty, with brief life history.
Anything and everything in pictures that carry a "punch" or are up to date news, suitable for reproduction--especially in rotogravure sections.--WH.

WASHINGTON NOTES

The Service Photographic Collection numbered 44,896 pictures on June 30.

Fellows! Meet Assistant District Forester C. G. Smith, in Charge of Lands and Grazing, District 7,--late of Forest Management, Western Division.

The Glorious Fourth was approximately celebrated by everyone in the Washington Office--in so far as a street temperature of 104.4 degrees would allow of any exuberance of spirits.

W. B. Barrows, in Charge of Forest Measurements, Branch of Research, has resigned to go into farming in Canada.

Cause and Prevention of Blue Stain: Blue stain is the most troublesome of the sap stains which discolor wood. It is caused by a fungus which germinates on the sapwood and penetrates its cells in search of starches and sugars. This action of the fungus causes no perceptible weakening of the wood, but the discoloration which results lessens the value of the lumber for many purposes, such as interior finish, flooring, and basket and box veneers.

Warm weather and a comparatively high moisture content of the wood are the most favorable conditions for the growth of the blue-stain fungus. Most of the infection occurs in green lumber which is piled without ample ventilation between the boards, in the mill yard or during shipment.

As yet, no absolutely dependable means of preventing blue stain has been found by the Forest Products Laboratory, other than kiln drying the lumber. The ordinary kiln-drying process is entirely effective against blue stain, but there are many cases in which this means of prevention is not feasible. Staining during air seasoning can be largely controlled by open piling. This affords free circulation of the air and so hastens drying, but not always sufficiently under adverse weather conditions to discourage the stain fungi.

The treatment of the green lumber with antiseptic dips is the most effective method which is generally applicable at the present time. For this purpose the chemicals commonly used are sodium carbonate (soda ash) and sodium bicarbonate (ordinary baking soda). Neither is a sovereign remedy under severe conditions, such as continuous rainy periods during the warm months, but will go far towards keeping the stock clean. In rainy seasons an 8 per cent solution of sodium carbonate is desirable, but in drier weather half this strength should suffice. A high grade of soda ash should contain about 58½ per cent alkali, and every effort should be made to conform to this standard of purity. When sodium bicarbonate is used, an 11 per cent solution should be employed in wet weather and 5 to 6 per cent in dry weather. This chemical when dry should contain about 37 per cent alkali.

In the use of these chemical dips, the following points should be kept in mind: (1) The solutions should be carefully mixed and the concentrations in the dipping tanks should be kept uniform by means of a hydrometer. (2) The solutions should be heated when applied, the bicarbonate solution not above 120° F., however, because it is broken down into the carbonate by excessive heating. (3) The stock should be dipped as it comes from the saw. (4) After dipping it should be carefully piled so as to insure ample ventilation. Narrow, chemically-treated cross strips are preferable to the wide, untreated strips commonly employed, since treated crossers tend to eliminate stain at the point of contact.

Service to Producers and Users of Wood Waste: The Wood Waste Exchange of the Forest Service has been transferred from the Washington Office to the Forest Products Laboratory, where its future activities will be centered. The Exchange was established as a Forest Service activity in order to assist the industries in putting to use wood which, because it can not be used by the owner, is now burned or otherwise disposed of as waste. It has in the past contributed much towards more complete utilization of wood, by supplying a medium through which the millmen and wood-using factories could locate markets for their side lumber and short lengths, and wood-consuming factories sources of material of this character which would meet their requirements.

Centering the activities of the Exchange at the Laboratory will permit an expansion of this service, in that it will be possible to include suggestions as to markets and new uses, based on the latest results of technical research in the utilization of timber and wooden products.

Quarterly reports called "Opportunities to Sell Waste," similar to those issued in the past, will be sent to all firms who wish to be listed as having wood by-products and waste in any form for sale. A similar report, "Opportunities to Buy Waste," will be sent to wood-using factories and other consumers who ask to be listed for this service.

The Districts will be amply supplied with copies of these reports, and will be kept in touch with all the activities of the Exchange which affect their region. A circular is in preparation at the laboratory which will furnish the districts information as to how they can make the Exchange of most value to lumber producers and users in their territory.

DISTRICT 1 - NORTHERN DISTRICT

P. J. O'Brien, the District Law Enforcement Officer, had conferences during April and May with the county attorneys and other law officers of 30 counties, for the purpose of explaining the plans of the Forest Service for enforcement of the Federal and State Fire and Game laws and to seek the assistance of the county officers, in the campaign for the protection of government property.

All the officers were much impressed with the plans of the Forest Service and the scope of its work, as well as its important bearing on local community advancement. Mr. O'Brien is of the opinion that notwithstanding the publicity given Service activities during the past few years there are still many people who do not understand the aims of the Service or what it is doing for the advancement of local industry and the betterment of local schools and roads. Many justices, sheriffs, and in some instances, county attorneys, did not realize that a part of the receipts from the sale of forest resources were covered into the county treasury for the support of the common schools and the construction of public roads. Mr. O'Brien has suggested that more items of news relative to Forest Service aims should be given to the county, or weekly, publications, since these papers are more fully perused by local settlers than the daily papers of cities or large towns.

That "Up to Hyalite" is the name of a film and not the appellation applied to a resident of Missoula, is apparently not clearly understood by all members of the District. A Supervisor recently forwarded this masterpiece of the cinematographer's art to "Mr. Hyalite, Missoula, Montana," the film narrowly escaping relegation to the closed files of the express office.

Montana Wolf Pups Go To Washington: Four little grey wolf pups caught by G. Griffith, trapper for the Biological Survey in the Jefferson and Lewis and Clark National Forests, will be sent to the zoological gardens at Washington, D. C. this month. They were captured in their den in the Snowy Mountains near the Merrimac ranch about two weeks ago, and although exceptionally wild at first, they have grown as tame as any puppy, according to E. J. Yoemans, Supervisor of the Jefferson and Lewis and Clark Forests, who returned this week from an official business trip in the Snowys and Highwoods.

The Pend Oreille office has a sample section of white pine, 21 years old and 16 inches in diameter, cut from a tree at Clarksfork. The rings show an average annual growth of one inch for the last 11 years and an average annual growth of one and a half inches for the last four years, demonstrating what this type of tree can do under favorable conditions. The circular slab will be dressed, polished and put on permanent display at the Chamber of Commerce offices.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Sheep Pay Road Toll: Inspector of Grazing C. E. Rachford, Assistant District Forester Hatton, District Engineer Mendenhall, Mr. Smith of the Bureau of Public Roads, the President of the Stock Association, and the County Commissioner for that district went over the new Durango-Silverton road to see what adjustment could be made concerning the damage done by the sheep. It was agreed that the extraordinary damage due to the sheep amounted to approximately $800 per year. The Stock Association agreed to contribute 3¢ per head for the sheep driving over this road and the Forest Service agrees to investigate the possibility of a driveway in order that the stock could be kept off entirely of the section where they are doing the most damage.

The San Isabel Headquarters, which recently moved to Pueblo, fortunately were not completely distributed over the Federal Building so that the inundation of the basement and four feet of the first floor did not wash away any of our equipment. There is reason to be thankful for this from the District office standpoint, as experience has shown that after a flood or fire, all subsequent property losses, for at least ten years, are ascribed to the disaster.

More Data On Denudation And Floods: The report from the Wagon Wheel Gap Experiment Station for the month of May contains the following:

> "Stream discharge for Streams A and B were, respectively, 13 and 60 per cent above their monthly averages. Ratio of discharge, Stream A to B, was 131 per cent, reaching 162 per cent during the second decade, with B receding during the third decade to nearly the same discharge as A. The crest of the flow, .948 C.F.S. for Stream A was reached at 1:00 P.M. of the 23rd; for Stream B was 1.327 C.F.S. at 6:30 P.M. of the 15th."

Before denuding watershed B the crest of the flood on B came from 3 to 10 days later than on A. This, the second year after denuding and the first year after the burning of the brush on watershed B, it is interesting to note that the flood came 8 days earlier on B than on A. Before denuding, the flood rose very gradually on B and held for a relatively longer period while this year it receded rapidly, dropping below A during the decade after the crest period. While further records with intensive study will bring out more in detail the effects of denuding this watershed, it is interesting to note, at this time, these obvious changes in the flow of the stream during the spring flood condition.

Superior Overseas Fleet: We have just authorized the purchase of two more launches for fire patrol on the Superior. This gives us a fleet of seven motor boats. We would like to know if Alaska or any other District can beat this for one Forest.

Snowy Range Recreational Development: A trip was made this week by members of the District Office and the Bureau of Public Roads, together with the County Commissioners of Albany County, Wyoming, and Supervisor Hilton over the road now being constructed between Centennial and Brooklyn Lake on the Medicine Bow. It was necessary to use saddle horses and a portion of the distance, near the Lake, had to be covered on foot on account of the snow banks which still lie in great depth, and probably will not be melted before the middle of July. Brooklyn Lake is destined to be very popular for summer homes and as a recreation area, and is exceedingly important from that standpoint to the city of Laramie. The County Commissioners showed great interest in pushing the road through and plans were made whereby it is hoped to make the lake accessible by automobile during the coming season. The Snowy Range, in which Brooklyn Lake is located, will, when made accessible to tourists, be used extensively in advertising the Union Pacific R. R.

Ranger Bill Says:

While you're figerin' on makin' the horses and cows comfortable, how about a little paint and linoleum for the Station, says my wife.

There's lots of nice people in the Service, but you'd never know it from the way some of 'em bang-up the 'phone receiver in your ear.

When everything's wrong and you can't sleep, count your "Red-letter days" instead of sheep.

DISTRICT 3 - SOUTHWESTERN DISTRICT

A Champion Arises in Defense of Bruin: Until bears are proved varmints, their unrestricted slaughter should be controlled, says a leading editorial in a recent issue of the Santa Fe New Mexican. The editorial was inspired by the combing of the Pecos region on the Santa Fe Forest recently by a party of eastern hunters with a number of guides and a pack of 50 dogs spending several weeks on a big hunt. The article cites the bears of the Yellowstone Park, where under strict protection, they have proven entirely harmless and constitute one of the leading attractions for visitors. Bears are a wild life asset to any scenic region, says the editorial.

Culebra Hill: Cuba-Espanola Road: The Culebra Hill section of the Cuba-Espanola road on the Santa Fe has been completed. The work done covers a three-mile stretch of very heavy work and cost the Forest Service $500. The contributions in cash, labor, teams, supplies, and horse-feed amounted to $1,288.30. This is an excellent example of what we can accomplish with a small amount of Government money and "pep" on the part of local Forest Officers in working up cooperation.

A Question for the Archaeologist: "Page six of the May 30 issue of the Service Bulletin states that the name Tacoma, Tah-ko-bed, or Tahoma, with various spellings and pronunciations, was a generic name which the Indians of the Northwest applied to any great snow-covered peaks. We ask you please, did the Santa Claras ever visit Washington? If not, whence comes the word Tsikoma applied by them to the second highest peak on the Jemez Division, sometimes called Santa Clara Mountain?"

Cleaning Up Santa Fe Water Supply Source: "After working upon the matter during the close of the grazing season of 1920 and for several weeks this spring, Ranger Blodgett has finally accomplished the practical exclusion of stock of all sorts from the Santa Fe watershed. This was accomplished through cooperation with the owners and by providing range for stock elsewhere on the Forest under permit. After most of the stock had been removed, there were some six or eight head of horses and burros for which owners could not be found still remaining in the Canon. These were rounded up on June 8 and as soon as taken off the Forest land were seized by the City Marshal and impounded.

The Navajo Canyon Road: Bids will be opened by the Bureau of Public Roads on June 29 for the construction of the Navajo Canyon Road on the Carson National Forest. This project is 10.13 miles in length and will probably be completed by Dec. 1. It extends south from the little settlement of Cebolla, through Canjilon and ends on the 6th Standard Parallel North. The estimated cost is $100,000, of which amount the Forest Service provides $75,000 and the State the balance. The Navajo Canyon project will make another very important link in the north and south highway, between Espanola and the Colorado State line, the entire completion of which is included in the five-year plan of the New Mexico State Highway Commission.

Botanical Freak: Living stumps of white fir trees that were cut probably ten or twenty years ago were observed recently in Cienaga Canyon on the Manzano. The bark of these stumps is living and growing over the top. One stump is hollow, and the bark has grown in one place over the top and down into the hollow. I believe this phenomenon has been observed in the Pacific Northwest on Douglas fir stumps and is attributed to natural grafting of the stump roots with roots of living trees. In this particular instance the grafting stumps are close to a large spring; stumps higher up the slope show no living bark.--W.S.

Wholesale Destruction: "Ranger Brennan and Mr. Rhinehart, Vocational Training Ranger, with a small crew, spent the early days of June chasing a privately-owned, 25,000 acre fire in and out between the 'shotgun' sections and quarter sections of Forest land near Sawyer in the Zuni Mountains. It was a hot and prolonged fight, but only five acres of forest land were burned. The fire was largely on old American Lumber Co. cutting--land now belonging to Silvestre Mirabel--and was exceedingly destructive, leaving practically none of the scant reproduction that survived the original devastating lumbering. It also entirely destroyed the cover of dense bunchgrass.

"Counting reproduction as worth 50¢ an acre (a low figure), forage $1.00 per 25 acres, and 100 board feet for merchantable timber (stulls, props, ties, etc.) destroyed per acre (worth $3.00 on the stump), then the loss caused by this fire approaches $30,000. It probably considerably exceeds this figure.

"Using this argument for protection, we have approached the chief landholders with a proposal for organizing a cooperative protection system and have received considerable encouragement."

At Last--A Modest Forest: "A prospective homesteader wrote to one of the Supervisors in District 3 for homestead information in northern New Mexico, wanting a place where he can have game and fish, wood and spring water, and some tillable land. The Supervisor calmly refers the letter to the Carson with the following notation: "You are farther north than we are, your air is clearer, trees taller, water sweeter and fish bigger than ours; you tell 'em."

Detective, Prosecutor, Judge and Jury: "Ranger Crain reports another sheepherder fire June 8. The Negrito guard had the fire out by the time Crain got there, so 'Jack' took up the detective end, and by some time after dark had secured a signed confession from the culprit and an order on Frank Hubbell (his boss) for not to exceed $15 for damages from the fire which he had 'carelessly' started on the Forest."

DISTRICT 4 - INTERMOUNTAIN DISTRICT

More About that Automobile: The following is an account of the presentation of an automobile to Supervisor Guy B. Mains, of the Payette, published in the Emmett Index:

In Appreciation of Services: Because of his valuable, unselfish and devoted services to Emmett and tributary country during his residence here, and especially for his effective work in the Black Canyon dam proposition, Mr. G. B. Mains was on Saturday presented with a new model Buick touring car by his fellow citizens. The presentation was made in the evening on the lawn at the Mains home after a brief talk by Ed Skinner. A large number of business men and a sprinkling of farmers were present. While Charles MacLean had the family out riding, the crowd congregated, the shining new car decorated with bouquets of flowers was run to in front of the residence, and when the family returned the lawn was filled with friends and the street was a jam of motor cars. The surprise was complete. Mr. Mains was too much overcome to say much, but left no doubt of his appreciation of this splendid gift and of the spirit which prompted it. The presentation grew out of a spontaneous desire on the part of many to express the town's appreciation of Mr. Mains' loyalty to this community and his valuable work in its upbuilding. In the giving the givers were as happy as was the recipient in receiving.

Can You Beat This Record?: We have been waiting patiently for some Ranger to come along with a record to beat that of Bill Smith of the Wasatch. Apparently those who could are too busy getting the new guards broke in and counting a few of the sheep that are entering. Operation will, however, enter the name of Ed Huffman for District champion. For six months of the summer season of 1920 Huffman averaged 845 miles per month. Incidentally, Ed handles 143,000 acres of the fire area of the Challis Forest; he has an average amount of 200 sales, free use and special use; a heavy tourist traffic; 1,700 head of cattle and 37,000 head of sheep. He had 11 fires last season and set the record for the District with an average "get away" time of 19½ minutes from report. Shoot !

New Fire Stamp on Wyoming: The following extract is taken from the Cokeville Register:

"A stamp bearing the Forest Service shield, 'Put Out Your Camp Fires,' and 'Bridger-Wyoming National Forest,' suggested by Ranger Dunn, has been adopted by the Supervisor and has been made in quantity and each Ranger of the entire unit will stamp all official documents that go through the mails during the fire season.

In addition, Ranger Dunn has made arrangements for the stamping of a large number of envelopes for each business house in Cokeville with the fire slogan.

Eagle Carries Off Coyote: Inspector of Grazing Winkler reports that during his trip on the Kaibab he was surprised one evening by the pitiful howls of a coyote pup. He then noticed a black eagle swoop down, pick up the pup and comfortably rise and fly off with it, the pup howling like a whipped puppy dog, which could be distinctly heard after the eagle had reached a height of 300 or 400 feet. Apparently judging from the cries of the coyote, the eagle must have struck it first and then circled again and picked it up.

New Species of Predatory Animals: While the Boise can not boast of diving sage hens or sagebrush ducks, we are able to report that our picket-pin squirrels are the most predatory of any reported so far in the West. Forest Ranger Selby reports that he caught picket-pin squirrels in the act of killing his flock of nice young chickens which he was carefully nursing along to furnish frys for visiting Forest officers. A strenuous campaign with traps and gun has relieved the situation temporarily at least.--Boise Accelerator.

DISTRICT 5 - CALIFORNIA DISTRICT

State Forester Gets $75,000 for Fire Prevention: Some time ago we wrote the State Forester an inquiry regarding the status of forestry legislation proposed at the last session of the California State Legislature. He reports that the budget has not yet been signed, but as it stands, the State Forester is allotted $75,000 for fire prevention and suppression during the biennial period; $10,000 for study of watershed areas; $15,000 for the maintenance of the State nursery; $27,000 for the support of his office; $6,000 for printing; and items for the salaries of the State Forester, Deputy, and Assistant.--T.D.W.

Timber Owners Cooperating on Insect Control: The timber owners of southern Oregon and northern California are undertaking active cooperative insect control operations on their land, and the Forester has been petitioned to secure an emergency appropriation so that the Forest Service may conduct control on related National Forest lands, thus making the work of the timber owners effective.

A preliminary report on the situation has just been received from District Forester Cecil, which indicates that a total federal area of 663,000 acres will be involved carrying an infestation roughly estimated at 33,700,000 feet B.M. The 75,000 acres which are involved in District 5 are located on the Klamath, Modoc and Shasta National Forests, and carry an infestation of approximately 4 million feet B.M.

The Bureau of Entomology, in cooperation with the Forest Service, plans to conduct a more intensive examination of the whole territory during the coming summer, and it is hoped that funds will be available to undertake active control next spring.

Mr. Dort Goes to Alaska: Mr. J. C. Dort left San Francisco, June 22, for the Tongass National Forest, southeastern Alaska, where he will be working for the next three months on water power investigations. This water power reconnaissance is being undertaken by the Forest Service with special reference to the development of the pulp industry on the Tongass.

Western Pacific Company Cooperates: The Western Pacific Railroad Company has issued a circular designated "CAMP FIRE PERMITS" to all its agents and representatives, announcing that camp fire permits are required on certain National Forests and giving the addresses of the Forest Officers from whom they can be secured. The agents and organizations authorized by the Forest Service to issue these permits are also given. The employees of the Company are urged to give the matter as much publicity as possible.

Camp for Y.M.C.A. Boys on Trinity: Recently Supervisor Jotter met with members of the Young Men's Christian Association and completed arrangements relative to the occupancy of the Forest Glen tract for a permanent summer camp by the Y. M. C. A. boys. The Association has decided on a permanent camp for at least a five-year period.

Dogs Frighten Cattle: The California Cattlemen's Association has suggested that hunters and campers be informed that cattle are grazing in the National Forests, and that camping near watering places keeps the cattle away from water. Also, that dogs running without control scatter and frighten the cattle. This condition is most serious in northern California, particularly in the fall during the hunting season, as the scattering of cattle by hunters' dogs makes round-up more difficult.

DISTRICT 6 - NORTH PACIFIC DISTRICT

A Bulletin on Douglas Fir: The Forest Service has never published a bulletin on Douglas fir. Some years ago there was gotten out a circular on second growth Douglas fir, but there never has been a full-sized bulletin. The species, however, is about to come into its own in this respect. As a result of eight years work centering at the Wind River Experiment Station, Dr. Hofmann has written and sent to Washington the manuscript of a bulletin on the silvicultural aspects of Douglas fir.--R.H.Weidman.

Buffalo on the Cowiche Range: There have been bison along the lower edge of the Rainier Forest. Two of them grazed through the summer with the beef belonging to the Yakima Meat Company. That may sound pretty tame, but driving them back in the fall was not so smooth. "Independent as a hog on ice," was the description then, for the big shaggy "humps" left a trail of broken fences and raided fields from the foothills well into Yakima. Some job for the cow-busters. Perhaps a little hard for the buffalo, too, for one of them has since died of pneumonia.--A.A.G.

Forest Supervisor Sherrard of the Oregon Forest has been elected president of the Council of Oregon Outing Clubs recently organized to bring various outing organizations into closer touch with one another, promote the proper use of outing facilities, educate the public to a better realization of Oregon's recreational resources and a more appreciative use of them, encourage mountain craft and the opening of new country, and to induce the public to aid in the suppression and prosecution of malicious and thoughtless destruction of recreation resources.

Helping Themselves: The summer home permittees at Zigzag and Still Creek, in the Mount Hood region on the Oregon, have formed an association for the purpose of installing a water system and other improvements on the Still Creek group of summer home sites at Rhododendron. The Forest Service is cooperating with this association and will furnish part of the water main. Water will be carried from Henry Creek about 4,000 feet to the new septic tank which is under construction at the Zigzag Camp Ground. In addition to the main line, about 5,000 feet of laterals will be laid to put water on all parts of the area.

"Local Color": Mr. Russell Slade, student at the University of Michigan and author of "The Tiger's Claw" now running in "The Country Gentleman," came out recently to the Northwest seeking a temporary position in the Forest Service to gain first-hand information about Service work which he will use later in Forest Ranger stories. He has had stories published by several magazines. Mr. Slade is husky, not afraid of work, and made it understood that he was not seeking "light, out-door employment," but expected to earn his pay. He got a job on the Oregon Forest.

Do You Know Alerce?: The Seattle Laboratory will soon begin tests on a small number of pieces of Alerce, a South American wood from Chile, resembling somewhat in appearance and durability the redwood of California. This tree is the most gigantic of the South American conifers, sometimes reaching the height of 200 feet and a diameter of 18 feet. From the great number of annual rings counted upon some of the trees there is reason to believe that some specimens attain an age of 4,000 years. In the southern continent Alerce is used extensively for the manufacture of barrels, vats, and buckets. It is also employed in preference to other woods for shingles, the lasting qualities of the wood making it especially good for this purpose. The object of the contemplated tests on Alerce is to determine its suitability for wood stave pipe construction.

DISTRICT 7 - EASTERN DISTRICT

A New Kind of License: In the mountains of Virginia the huckleberry, the dewberry, the raspberry, and the blackberry, are the "meat" of all frugal souls who realize that Old King Frost spoiled the fruit crop for this year. Recently, one of these souls who has respect for the Service came into the office of the Supervisor, saying that he would like to have a permit to pick berries on Government land. He rather surprised us, but after some figuring it was decided to give him a "hunting and fishing permit" with "gather berries" inserted. This hunting and fishing permit carries a clause that states,--"you are privileged to hunt and fish on Government land within the Natural Bridge National Forest, provided that you will report all forest fires and will assist in suppressing such fires as may occur within a radius of five miles from the point where you are hunting." The permit was issued and the permittee departed on his way happy, but he STARTED SOMETHING!

It was but an hour or so until another came in. "Please, kin I git a permit to get huckleberries offen the mountain?", and that was the beginning of a steady stream. Everybody wants a permit, and everybody's gettin' it. In less than a week we issued a hundred permits and most of these included the whole family. The roving small boy wants one for his very own and he is given it, but he is asked to read it "out loud" before he takes it away and his big impression that he also takes away is that there must be no "fire on the mountain." This is not the midst of a fire season, but it can safely be said that the idea of protecting the forests from fire was never so generally and generously scattered among just the "plain people" in and around the Natural Bridge.--S.B.Helms.

Forest Assistant E. B. Stone, Jr., of the Natural Bridge, had a set to with a bad dog while on the North Creek Trail last week. Owner said the dog wouldn't bite, but it did, and left a brand on Stone's right calf. The seven and eight gun was in the rucksac, and being satisfied with just one bite doggie trotted back to its owner getting off with just a slight switching.

Notes Off the Editor's Spindle

Fire is always a good news item locally, but it's got to be big, unusual, or interesting to make a F. S. man sit up and take notice.

Light "copy" goes in warm weather. Cut the heavy stuff until the winter evenings.

Service Bulletin contributors, in numbers, run about the same per cent as alcohol in Near Beer.

Cut down Jim's article from five pages to two. Lots of good stuff in it, but too much "preaching."

A Snappy News Item is as hard to find as a Smoke Chaser on a hot day.

FOREST SERVICE
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Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. V, No. 24. Washington, D. C. July 18, 1921.

FOREST CAMPS

By Frank A. Waugh

Some one from D-3 asks for a new name to replace "Picnic Grounds" and "Camp Grounds." Why not call them "Forest Camps?"

The name "Forest Park" is suggested with the acknowledgment that the term "park" is objectionable. On the other hand, the term "forest" is highly desirable. The term "camp" is wholly appropriate, dignified, and has nothing but pleasant connotations.

How desirable this term "forest" is we have not yet begun to recognize. The value of this word can only be suggested by recalling that the big recreation grounds and those most highly prized near the great cities of Europe, have almost universally been called forests, not parks. There comes to mind on the instant the Forest of Fontainebleau, Sherwood Forest and the State forests surrounding Berlin, Prague and Vienna.

It is also significant to note that when public-spirited men and women of Illinois recently secured certain scenic reservations in that State they refused to have them called "state parks"--though that is exactly their function,--but insisted that they go into the records as "forest preserves." When I remonstrated with one of the leaders he told me flatly that the reason was that the word "park" had an evil reputation!

Let us therefore cherish the term "forest" and strive to protect and dignify it as we have opportunity.

Are Birds Killed by Eating Prairie Dog Poison?

By Will C. Barnes, Washington

There has always been a great deal of discussion as to whether or not the use of poisoned grain on the ranges to rid them of prairie dogs and other rodents is dangerous to birds.

Many kinds of grain suitable for bait have been tested out thoroughly to determine those that are most attractive to rodents and least likely to be taken by birds. The Biological Survey, after making these experiments, discarded all the small grains, including wheat, and are now using oats and barley, which are much less frequently eaten by birds.

During the year 1920 the Biological Survey, in cooperation with different parties and organizations, covered approximately 20,000,000 acres of land infested with prairie dogs and other rodents. Their men were instructed to give close attention to the question of bird poisoning, and, as far as possible, discover the number and kinds of birds supposed to have been killed by the poisoned grain. These investigations showed that doves and other small birds are sometimes killed if the grain has not been thoroughly cleaned before being poisoned, so that there is left in it considerable quantities of smaller grain, such as weed seeds, wheat, etc. One of the prime requisites in this matter is to see that only plump, well-cleaned grain is used in the poisoning operations.

Are Birds Killed by Eating Prairie Dog Poison? (Cont.)

The Biological Survey some years ago prepared a memorandum regarding this matter, which is as follows:

"Gallinaceous birds as a group possess a certain immunity to strychnine poisoning, but little definite information was available regarding its effect on quail until within the last few years. A representative of the Biological Survey conducted some experiments in California in 1918, and established definitely the fact that barley poisoned according to the Survey's standard ground-squirrel formula in use there had no material effect on the abundance of the valley quail under natural conditions. Ground squirrels were exterminated, but not a single dead quail was found. Specimens subsequently shot showed that quail had been eating the barley to a limited extent.

"Experiments with captive birds fed on the standard ground-squirrel bait showed that valley quail might eat it extensively with no deleterious effects. One adult valley quail consumed 125 kernels of poisoned barley in 24 hours with no trace of ill effects. This means that without injury to itself this bird ate enough poison to kill 12 ground squirrels. A limited number of similar experiments with mountain quail and bob-whites gave like results.

"The Chief Game Guardian at Saskatchewan, Canada, conducted some experiments with prairie chickens. A single bird of this class ate sufficient poisoned grain to kill 100 ground squirrels without experiencing any ill effects."

It is evident, therefore, that the charges made that the use of poisoned grain is killing off the song and insectiverous birds is not well founded. The above facts will assist Forest officers in meeting the criticism which every now and then arises where operations against prairie dogs or other rodents is being carried on by the Government.

A Dream Comes True

Extracts from a Letter

Albany, N. Y.,
May 7, 1921.

To the Corporation of Yale University,
New Haven, Conn.

Gentlemen:

I desire to make a gift of $300,000 to you on the following conditions:

Two hundred fifty thousand dollars to be used for the construction and equipment of a building for the use of the School of Forestry of Yale University, and $50,000 to be set aside in a separate fund, the income from which shall be used for the maintenance, upkeep and care of said building.

The official name of the building shall be "Sage Hall," and in it an appropriate tablet shall be placed indicating that it is given in memory of my deceased son, DeWitt Linn Sage, of the class of 1897.

Yours truly,

William H. Sage (B.A.Yale 1865)

Action of Yale Corporation, May 14.

Voted: To accept with sincere thanks the offer of William H. Sage, Esq., and to assure him that the President and Fellows highly appreciate the offer and realize its great significance.--Yale Forest School News.

The Call of the Red Gods

By Allen F. Brewer

From the trail that's still untrodden,
  From the pine woods' lofty aisles,
From the fastnesses of Nature,
  Comes a call that my heart beguiles.
And it wakes my soul to a longing
  To forget, and begin again
Life's trend where the Red Gods beckon,
  Afar from the haunts of men.

Then I'll follow, O ye Red Gods,
  Till the sun shall sink to rest,
With the cares of the world behind me,
  As I trail toward the golden west.
And a luring spell shall grip me,
  'Tis the spell of Nature's creed,
That only the Red Gods whisper
  To them of the woodland breed.

Here's How!

By Arthur H. Carhart, D-2

How did you do it? From all of the statistical plunder paraded in the article so headed in the Service Bulletin of May 30, a complicated answer might be expected. The true answer is simple. We simply applied the sound principles and methods of the regular practicing landscape architects. In the commercial field a professional landscape architect has to turn out a better plan at a less cost than any quack who is dabbling in the landscape field or he can not keep in competition. In D-2 we simply followed professional practice of Landscape Architecture.

Mr. Friedhoff doubts our figures;I do not doubt his. Those quoted on costs of the two layouts on the San Isabel include every item of known expenditure on the project to date which directly dealt with the planning and development. We are not trying to kid ourselves into an economy fit nor run a bluff on the rest of the Service. We are trying to get right down to bedrock and put this landscape work on the basis where it should be in every branch of the Service, making it an asset rather than a liability.

As for the plans, D-2 will back them against anything any other District can show so far as a thoroughly organized summer home community is concerned. And it is gratifying to know that they have been turned out at so reasonable a figure for planning and preliminary field work.

It is pretty sound economy to put a man trained for the work in charge of a job. Recreation planning of any land surface is in the field of landscape architecture and a landscape architect with proper training and experience can naturally do better work in his field than others not trained especially as men of this profession. If he couldn't he would not last long in the commercial field--or elsewhere. So the answer is easy--a landscape architect on landscape work should assuredly make a good economical plan and development. That is what he is trained for.

My Uniform Creed

By K. E. Kimball, White Mountains

I believe in a uniform for all Forest Officers.

I believe this uniform should be standardized, with insignia showing rank and length of service.

I believe the standard uniform should be made compulsory for every officer on the statutory roll from the Forester down, during working hours, and that it should be furnished as a part of every officer's compensation.

We all want to get the Forest Service before the people and a uniform is a great advertisement. If every officer in the Atlantic Building, Washington, came and went in uniform, don't you guess the policeman on that beat would be able to tell where Forest Service headquarters is? A uniform is economical for the wearer, it makes his work easier in many ways and increases his efficiency as an administrative officer. If we can't have a uniform under regulations as above, I believe in not having one at all.

Proposed Fordney Tariff on Wood and Lumber

Timber, hewn, one-half cent a cubic foot (Underwood, free); logs, fir, spruce, cedar, or hemlock, $1 a thousand feet (Underwood, free; provision is made for exemption to countries having no embargo or restrictions upon exportations to the United States during the last year); logs, sawed boards, and other forms of cedar, lignum-vitae, ebony, mahogany, and other cabinet woods, 15 per cent (Underwood, 10 per cent); wood veneers, 20 per cent (Underwood, 15 per cent); railroad ties, telegraph and telephone poles, 10 per cent (Underwood, same); wheel woods, 10 per cent (Underwood, free); pickets, staves, and hoops, 10 per cent (Underwood, free); shingles, 50 cents a thousand (Underwood, free); casks, barrels, and packing boxes, 15 per cent (Underwood, same); reeds and rattans, 20 per cent (Underwood, 10 per cent); blinds, shades, and screens, 25 per cent (Underwood, 20 per cent); house or cabinet furniture, 25 per cent (Underwood, 15 per cent).---Congressional Record, July 9, 1921.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Game Cooperation in Minnesota and Nebraska: A cooperative agreement has been executed between the State Game and Fish Commission of Minnesota and the District Forester, providing for cooperation in game matters and for the appointment of all Forest officers as Deputy Game Wardens.

A Game Refuge comprising the Niobrara and Bessey Divisions of the Nebraska National Forest and known as the Nebraska National Forest Game Preserve was established by the Legislature of Nebraska last spring.

The Massachusetts Forestry Association Tour Party is traveling through the National Forests and Parks again this year, making its initial start, as usual, at Estes Park. It was announced by the Secretary that there would be about 25 members, but only 2 besides the Director arrived in Denver. Others will probably join the party at different places throughout the West, and it is possible they will have as many as 25 by the close of the season.

The Superior reports that there has been a little rain and all fires are under control. During the last ten days there were eight or ten fires burning and about 100 men employed. The cost will probably be in the neighborhood of $5,000.

"Camel" Starts Fire: While it is frequently assumed that fires are started by careless smokers, it is a rare instance where direct evidence points conclusively to such a fact; but last week during the progress of a carnival show in the Black Hills, a fire broke out nearby on the side hill, and Forest officers were called on for help. Deputy Supervisor Gill responded and got some men on the fire. Looking around for evidence as to the origin, he found a cigarette stub on which it was possible to read the name "Camel" and the evidence was plain that the fire started from this point.

Stockmen Want More Time: The Secretary of the Colorado Stockgrowers Association has been on an extended trip to local stock meetings, and the State Association was urged very strongly everywhere to try and have the deferred grazing fees postponed from 30 to 60 days longer in all cases where stockmen do not expect to ship by September 1. The State Association has taken this matter up with the Colorado Senators and Congressmen.

Ranger Bill Says:

To a feller out in the "brush" it don't seem like we need worry nigh as much about "oversellin' recreation" as "undersellin'" the other big things in forestry.

Cigarette stubs and pants buttons don't necessarily indicate there's a man in camp these days.

I know several Rangers that has beat the 625 miles-a-month ridin' record--on cushions.

Interstate Fishing Treaty: "My predecessor and the Colorado game commissioner had what was called a 'gentlemen's agreement' to the effect that parties fishing on streams running through both States, who had either a Colorado or New Mexico fishing license would be privileged to fish on these streams for a distance of ten miles on either side of the State line. This was done, and has been continued by the present Colorado game commissioner and myself for the reason that these streams are stocked by both States, and it is very difficult while fishing to determine just which side of the line one is on."--Letter from N.M.State Game Warden to Carson Supervisor).

TNT Causes Fire: "A short time ago the foreman of the Baldy North Trail crew reported a fire that started a few minutes after the use of a heavy charge of TNT on the trail work. The fire broke out about ten feet below the trail where the blast was set off. No blasting is done after 2:00 P.M. on account of the fire danger.

Better Sires Movement Strikes the Huachucas: "Two of our permittees were on a trade for a bull. The prospective purchaser asked if the bull was registered. The seller permittee said 'No he haint, but I ken git him, for I'm well acquainted with all them county officials down at Nogales, and it won't cost nuthin.'"

Boy Scouts Inspection of Carson: The Boy Scouts of Liberal, Kansas, fifty strong, were the guests of the Carson Forest from June 16 to 19. Deputy Supervisor Dwire met the motor cavalcade at the Eagle Nest Dam in Ute Pass and accompanied them to Red River, where the party spent one day; to Eagle Rock Ranger Station; and then to Taos for several days of sight-seeing. A number of camp fire talks on the life and work of the forest ranger and Forest Service activities were given by Carson Forest officers. On June 20 the Scouts turned their faces toward the flat Kansas plains after declaring the Carson mountains the best place they knew to have a good time and all voting to return to New Mexico and be Forest Rangers.

Asbestos Mountain Burns: We have all heard the old joke about the "fire in the stone quarry," but leave it to the Tonto to be original. A pay roll now in the office shows a fire on Asbestos Mountain and one in Bottle Spring.

Spanish as She is Spoken: "But I know lots of Spanish nouns, only I never have any verbs to put them to work."

"In that event," says Supervisor Shepard of the Manzano, "use your hands."

"Spanish Terms for Forest Rangers," compiled by Ward Shepard, is, after some delay, printed and being distributed to the field. It is an attractive little book and should be the cornerstone on which field men who need it will lay a structure of Spanish sufficient, at least, to conduct the average run of business with our native permittees. In order to conserve the supply of these dictionaries, they are designated nonexpendable property.

A Sign Tip: "A poorly located sign is worse than none at all, so far as Forest Service prestige is concerned, for the absence of a sign at a forks of the road evokes no comment, while one so located as to be hard to see and harder to read generally gives rise to a monologue of the variety indicated by dashes and exclamation points. Anyway, it's vastly easier to set a post than to explain to an inspecting officer why you didn't."

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Who Plants A Tree

Give fools their gold, and knaves their power;
  Let fortune's bubbles rise and fall;
Who sows a field, or trains a flower,
  Or plants a tree, is more than all.---J.G.W.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Splendid Forage Conditions on Sawtooth: It's been a corkin' spring and Sawtooth lambs are stepping high. Much to our delight, the "desert" has bloomed like the rose, enabling herds to be kept back longer than for many years. Main trails were not opened until the 17th, two weeks later than last year. The condition of the "desert" is the deciding factor in the movement of sheep to the Forest. The drouth during the past three years has forced sheepmen to push up rapidly to the Forest boundary, where we had to concede a point or "bum" a lot of lambs. This season the desert has staged so good a come-back that a large percentage of lambs have been shipped before entering the Forest. Aside from the good forage conditions, stockmen are very pessimistic about most everything. A few of the old-timers state, however, that they have had to weather much harder times than these.--Sawtooth News Letter.

Brooklyn Eagle Party: The Brooklyn Daily Eagle party, whose trip to Zion Park has been advertised for the past year, arrived in Cedar City on Monday, June 20. The party went on to Zion the same evening. Mr. Kaltenborn, Manager of the excursion, and who is Assistant Managing Editor of the Brooklyn Eagle, with Mr. Cutting of the Salt Lake Route, returned Tuesday evening, and on Wednesday made the trip to Cedar Breaks by car and horseback, accompanied by an escort from the Commercial Club. All members of the party were entertained at dinner by the Commercial Club at the B.A.C. dinner room on Wednesday evening, where different ones expressed their appreciation of southern Utah scenery and the hospitable treatment received from the local people. The party left for Lund the same evening and will go directly to Hawaii by way of Los Angeles to dedicate the newly-created Hawaiian National Park.--Dixie Doings.

Baker Enters New Field of Activity: Hundreds of people taking refuge in City Hall Park Thursday evening to get relief from the heat had their curiosity aroused considerably when they saw Forest Examiner Baker leading a troup of lively Girl Scouts from tree to tree. After listening to Mr. Baker's remarks, the curious people learned that he was only giving them valuable information about the distinguishing characteristics of the many varieties of shade trees in the park.

DISTRICT 5 - CALIFORNIA DISTRICT

Windstorm Creates Havoc: Supervisor Coffman of the California reports that a severe windstorm last winter blew down approximately twenty-five million feet of timber in a swath five miles long by three miles wide, between the Gravelly Valley and Sanhedrin Mountain. The wind was of such velocity that the trees which withstood it were very largely stripped of their limbs. A little over half the area involved was National Forest land. Windstorms of this size are of rather rare occurrence in District 5; only three or four have been reported within the last ten years. Although this timber is remote from the railroad, there is a good wagon road from the area to Ukiah, and an effort will be made to have the situation examined in the near future with a view to salvaging the timber before it deteriorates, if possible.

A Flying Trip! Associate Forester Sherman, Solon H. Williams of the California State Board of Forestry, M. B. Pratt, Deputy State Forester, and the District Forester, left Sacramento on the morning of June 25 and made the Lake Tahoe circuit. A visit was paid to Supervisor Smith at Placerville, the Pacific Ranger Station, the Sayle's Flat Camp Ground, and the Sacramento Municipal Camp at that place.

The party stopped at the Pyramid Ranger Station and tarried for the night at Meyers where a visit was paid to Ranger Bryan, whose summer station is at that place. The Lincoln Highway is in fine shape and there were many automobilists on the road. While Ranger Bryan is looking after fire protection and trying to satisfy the hordes of special users, Mrs. Bryan is kept busy in passing out maps, camp fire permits, hunting licenses to those who call at the Station--15 had their wants filled the evening of June 25. From Meyers the party drove down to Tahoe, passing the Emerald Lake Public Camp

A Flying Trip! (Cont.)

Ground, which was thronged with automobilists. From there the drive down the west shore of Lake Tahoe was made to the Kent Public Camp Ground, which is also a very popular stopping place. On the road the party passed Assistant District Forester Barrett and Capt. Smith of the Air Service, who were looking for a site for a rest camp for officers of the Air Service.

The party proceeded to Truckee, where a call was made at the Ranger Station. Lunch was obtained at a resort on Donner Lake. Thence the party proceeded over the summit and down to the Ranger Station and Public Camp Ground at the Big Bend of the Yuba. The trip was continued to Colfax, Auburn and Sacramento, 260 miles in all, around a circuit of valley, foothill and mountain territory hard to equal anywhere. Mr. Sherman expressed his great pleasure in being able to see so much in such a comparatively short time.

Southern California in The Lead: The three southern Forests, the Angeles, Cleveland and Santa Barbara, are certainly to be congratulated on the excellent results secured this fiscal year in obtaining funds from individuals and organizations to carry on cooperative work. The total amount contributed was $77,030 and it was used for improvement and protection work on the various Forests. This is a substantial endorsement of the Forest Service and its policies, and we have no doubt the good work will continue.

The Hobart Estate Company of Hobart Mills, California, are having their brush piled and burned this season in connection with cutting on their own private lands as well as on National Forest timber sale areas.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Scenic Strips: There has been considerable agitation for the past year in Oregon for reserving strips of timber along main highways. This sentiment was crystallized in the following Act, which became law on February 26 with the approval by Governor Olcott.

BE IT ENACTED BY THE PEOPLE OF THE STATE OF OREGON:

Section 1. The State Highway Commission may acquire, for and in the name of the people of the State of Oregon, by purchase, donation or by proceedings in eminent domain, rights of way, land or trees and ground necessary for the culture and support thereof on or along the course of any State highway or any public highway within a maximum distance of 300 feet on each side of the center thereof, in any case where the acquisition of such rights of way, land and trees will be for the benefit of the State highway or public highway in aiding the maintenance and preservation of the roadbed of such highway, or aid in the maintenance and preservation of the attractions and the scenic beauties thereof.

Forest Supervisors in Oregon, under a proposed agreement with the State Health Director, may shortly be appointed Deputy State Health Officers.

Death of Trees After Forest Fires: It commonly happens that a considerable number of the trees which have escaped the direct killing effect of a forest fire will turn brown and die during the first and second years following the fire. This is especially true after ground fires in the yellow pine forest, where this dying off of trees has been investigated in the last few years by both the Forest Service and the Bureau of Entomology. The findings are that the death of the trees is due to the western pine beetle. The fire, by its slight charring of the trees, seems to make them especially inviting and susceptible to the beetle.--A. J. Jaenicke.

Elk Bulletin Distributed: At the suggestion of Forest Examiner Jaenicke, 25 copies of "Our National Elk Herds" by E. W. Nelson, Chief of the Biological Survey, and former Forester H.S.Graves, were sent to Mr. Gordon Baker, Secretary of the State Association, B. P. O. E. Mr. Baker expressed his appreciation of these, which he has distributed to the different Elks lodges of the State.

Pack Boards on the Whitman: The new Alaska Pack Boards recently sent out by the District Office have been equipped with locally manufactured water cans. The cans are of galvanized iron, 19½"x6"x15½" with a 2-inch screw opening in the top. The capacity of each can is six gallons and the whole outfit with can filled weighs approximately sixty pounds. Each primary lookout on the Whitman will be equipped with one of these outfits this season.--W.L.Dutton.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

Vol. V, No. 25. Washington, D. C. July 25, 1921.

THE NEXT GREAT STEP AHEAD

In Forestry

By Raphael Zon, Washington

There are about 2.8 billion acres of forest in temperate regions and 3 billion acres in the tropics. Of the temperate forests probably only about 1.4 billion acres are occupied by coniferous softwood timber. The tropical forests are almost exclusively broadleaf species or hardwoods. The area of hardwood forests, therefore, is over three times that of conifers. Yet the world is using annually coniferous softwoods for construction at the rate of some 23 billion cubic feet, tropical hardwoods only at the rate of about 2 billion cubic feet, and of tropical and temperate hardwoods together at the rate of about 13½ billion cubic feet.

The world is undoubtedly faced with a timber shortage, but this shortage is primarily of the softwood or coniferous timber. There are still vast undeveloped and unexplored areas of hardwood timber in the tropics and subtropics. There are only a few areas of coniferous timber that are not already called upon, in many cases far beyond their capacity, to meet the needs of the world for this kind of timber. The softwood regions are in northeastern European and Asiatic Russia, Scandinavia, Canada, and the United States. Countries which possess enormous areas of hardwoods, such as Australia, Indo-China, British India and the entire Malay Archipelago, are importing coniferous softwood timber from the United States, Canada, and the Baltic States for construction purposes.

Many of the tropical and sub-tropical countries which have large areas of hardwoods are now planting on a large scale coniferous species not indigenous to their own country. Some of the States of the Australian Commonwealth, for instance, plant thousands of acres of the Monterey pine from California and other conifers.

The dipterocarps, a family of tropical timber trees, although not conifers, include many light and softwoods. These tropical species, when they come sufficiently into use and their forests are developed, may diminish the import of northern conifers into those countries. They can never be expected, however, to become a source of supply of softwood timber to take the place of the northern pines, spruces, larch, and other conifers. The problem, then, is to increase the production of coniferous softwood timber which so far, because of its lightness, strength, and the ease with which it can be worked, has proved itself to be far superior to hardwood timber for construction purposes. The pines, spruces, and firs inhabit chiefly the temperate and northern countries, the center of the most highly developed civilizations. In some of them, such as France, Belgium, Germany, Switzerland, and Italy, the density of population and the need for cultivable land does not leave much room for extending the area of coniferous timber. In those countries more intensive forest management for the purpose of increasing the productivity of the forest land is the only means left. In other countries, however, and strange as it may seem, even in such a highly industrialized country as England, and particularly in Canada and the United States, there are millions of acres of idle land which could be used for the growing of coniferous timber. In my opinion, this is the big problem in forestry to-day from the world's standpoint.

The Next Great Step Ahead (Cont.)

Distinction must be made between temperate and tropical hardwoods. While tropical hardwoods may take the place of many of our temperate hardwoods, such as oak, hickory, walnut, and others, the importance of having supplies of such hardwoods close at hand must not be lost sight of. Economic readjustments in the use of raw materials is a slow, and, at times, painful process. Shortages of such temperate hardwoods are already keenly felt in the United States, although the supplies of hardwood in the world are enormous. Moreover, the hardwoods in temperate regions, as a rule, occupy the better soils and as settlement increases, the hardwood forests, as was the case in the Ohio Valley and is now taking place in the Mississippi Valley, must give way to cultivated fields. Still the fact remains that it is the future supply of softwood coniferous timber that is the most troublesome problem.

What Are Obstacles to a Ranger?

People who visit the National Forests have found that a job has to be pretty difficult before the Ranger will admit it can't be done. The manager of the Epworth League was taken up American Fork Canyon by Ranger West, to look over a camping site at the base of Mt. Timpanogos. He had to wade through about six inches of water on one of the bridges to make it. They found the road washed out in several places and completely gone in others. He was about all in when they reached the camp ground, but exclaimed "This is the place," when shown the area. He came back to this office, saying that he would give $50.00 in addition to ordinary expenses if he could pitch a camp there this spring and hold an institute for about one hundred people; but he was afraid that it would take at least a month to repair the road.

The next night the bridge washed out, but Ranger West got the County Commissioners to act and had the bridge back in a few days. He finally persuaded the manager to hold his institute; convincing him that the road would be repaired. Ranger West repaired a good part of the road and the manager took his truck, with five tons of equipment on it, up the canyon. They got over the first bridge all right, but went through the second, a lot of their material going down the creek.

Naturally things looked pretty discouraging, but West persuaded them to carry out their plans. The truck was rescued within a few days, and the caravan proceeded. With only a mile and one-half to go to their destination, another stretch of road was washed out and the Road Commissioner said that he could not repair it in time for the institute. Ranger West called up the County Commissioners and got them to loan him a crew of five men. The result was that the road was completed and one hundred people are now camping for a week at the base of Timpanogos.

The manager of this institution called at this office the other day and stated "That man West can't be beat--Are all Rangers like that?"--Wasatch News Letter.

News - As It Should Be Writ

Augusta, Ky., ________: A six-foot black snake refused to budge from his den under an old stump to-day. W. H. Winter, farmer near Augusta, decided to smoke out the reptile.

Fire spread from the stump to a twenty-acre hay field. The field was dry. Appeals were made to the fire department when the flames shot out in every direction.

Farmers for miles around hurried to the scene, and with the aid of a timely shower of rain managed to save the city.

The snake escaped.--Associated Press.

Southern Pine Growth and Yield Study

By E. R. Hodson, Washington

Field work is progressing on this project, which was made possible by a $10,000 contribution from the Southern Pine Association under the guidance of the Forestry Committee of the National Research Council. Already 82 plots in well-stocked stands have been measured. Of these, 50 were obtained by the U. S. Forest Service in Georgia and Alabama, and 32 in Texas by the State Forester. In North Carolina, State Forester Holmes has the work under way, and Superintendent of Forests Forbes is beginning his part in Louisiana.

Some interesting facts are being brought out. For longleaf pine the annual basal area increment, at about 100 years, is about 1½ sq. ft., or 1%; at 50 years, about 3 sq. ft., or 2%; and at 15 to 20 years it may range as high as 4 to 8 sq. ft., or 5% to 7%.

Five kinds of pine are included in the study, two of which (longleaf and slash) are turpentined. Fire and turpentining are seriously interfering with the continued production of these two species, especially longleaf. Longleaf seeds abundantly only at intervals of from 5 to 7 years. Fire runs over the surface every year. It is a constant feature of the southern areas and does great damage both to the young stands and to the soil. In the case of longleaf, when one crop of seedlings is wiped out by these surface fires, the areas are delayed in seeding 10 to 14 years or more. This species has adapted itself to frequent fires, so that after the first few years (possibly the first or second year on good sites) most of the trees survive. They are much damaged, however, and growth is greatly retarded because the foliage is all killed and must be replaced after each fire. Absence of fire can not fail to increase growth and also improve the soil.

The Wail of an Old Time Service Man

By Edward P. Ancona

A hundred oaths at least I've sworn
The Constitution to defend;
I've told my birthday many times;
My history written without end.

To Adam clear, my ancestry
I've traced completely, there and back;
My good and bad points I have told
As well as virtues that I lack.

There was a time when I was young
In years, and foreign to the game;
I wandered, pondered, fretted, but -
I filled them all out just the same.

At last, with years, I've patient grown,
And I am sure with smiles I'll meet
St. Peter, standing at the gates,
With oath and pers'nel statement sheet.

WASHINGTON NOTES

National Forest Receipts for F. Y. 1921: Total receipts from the National Forests for the fiscal year 1921 amounted to $2,540,045.79, as against $4,793,482.28 for the previous fiscal year, a decrease of $2,253,436.39, or approximately 47 per cent. All major activities except Special Use show a small decline as is indicated by the following table:

Activity	Increase or Decrease
Timber Sales	- $271,997.73
Timber Settlement	+ 3,447.52
Timber Trespass	+ 36,580.02
Grazing, C. & H.	- 1,223,792.94

Activity	Increase or Decrease
Grazing, S. & G.	- $761,127.54
" Trespass	- 13,921.39
Special Use	+ 9,181.47
Occupancy Trespass	- 403.97
Water Power	- 4,737.81
Fire Trespass	- 16,837.74
Property Trespass	- 73.00
Turpentine Sales	- 10,332.03
" Trespass	+ 578.65
	$2,253,436.49

Deferred payment of grazing fees may be said to account for $1,984,920.47 of the total deficit, providing the same number of permits for range were issued this year, as last.

All Districts show decreases, except D-8, which was not in existence during the fiscal year 1920.

District	Increase or Decrease
1	- $87,170.92
2	- 431,759.26
3	- 596,139.14
4	- 560,785.16
5	- 199,818.56
6	- 362,368.28
7	- 36,499.01
8	+ 21,103.84
Total decrease	$2,253,436.49

The "silver lining" to all this is, that if the grazing fees had been paid in as usual, we would only have had a deficit of $268,516 for the year--this in face of the fact that there has been a tremendous business depression throughout the entire country for many months. The figures speak well for the policies of the Forest Service, which aim at stability of industrial and economic development, and at the same time tend to discourage the speculative element.

The Service Lantern Slide Collection numbered 19,319 slides on June 30. During the fiscal year 1921 some 72 loans of 2,595 slides were made to Forest officers, and 470 loans of 26,630 slides to the public. Slides loaned to cooperators were shown 1,556 times to 99,648 persons. Over 1,700 slides were added to the collection during the year.

The Grazing Section of the new Use Book is just off the press. It contains all the grazing regulations and instructions which it seemed advisable to furnish the public, together with the sections of the trespass manual relative to grazing, fish, and game trespass, and also the administrative part of the Manual covering appeals.

The supply will be held in the Washington office subject to requisition from Forest officers for such quantities as they will need for distribution.--W.C.B.

Elevator Pilot Gayles of the Atlantic Building, who recently fell down the elevator shaft from the second floor to the basement, badly shattering his shoulder, arm and ribs, is still in a serious condition. He is very grateful for the $59.00 contributed by members of the Forest Service towards his expenses, and wishes to express his sincere appreciation.

They're Off! Telegram from District Forester Morrell, July 18:

"Fire conditions serious on all Northwestern Montana Forests and in north Idaho excepting Selway and Nezperce. All fires under control except one Coeur d'Alene."

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Large Wyoming Timber Chance: The East Dunoir unit on the Washakie Forest is now being advertised. The timber in this unit was estimated in 1920. It contains 1,062,000 hewn, standard gauge railroad ties; 20,000,000 feet b.m. of live, and 525,000 feet b.m. dead sawlogs. Lodgepole pine predominates with small amounts of limber pine, Douglas fir, Engelmann spruce and Alpine fir. The lowest rates which will be considered are 5¢ for railroad ties; 50¢ per M feet for sawlogs; and 10¢ per hundred linear feet for mine prop material.

This unit is close to the operations of the Wyoming Tie & Timber Company, who have been cutting ties in this region for the past eight years. The ties are driven down Wind River to Riverton, a distance of 100 miles, and are all purchased by the Chicago & Northwestern Railroad, which maintains a tie-treating plant at this point.

Birds Damage Seedbeds: At the Beal Nursery, East Tawas, Michigan, it has been found necessary to erect seedbed screens to protect recently-sown seedbeds. During the past spring birds discovered that germinating seedbeds make excellent feeding grounds, and before protective measures were inaugurated, the birds destroyed the seedlings in 7 beds containing approximately 300,000 seeds. The white-throated sparrow, wild canaries and cow birds caused the destruction.

The Solicitor has just rendered an opinion that land in the Forests, for which patent has been issued, and has been reconveyed to the United States, becomes a part of the Forest.

Supervisor French of the Holy Cross Forest has long been anxious to tackle a large reforestation project. The opportunity presented itself this spring when 38,000 Engelmann spruce were made available by the abandoning of the Cottonwood Nursery in District 4.

Deputy Supervisor Hunter of the Holy Cross was in charge of the job and was assisted by ten Rangers from the Holy Cross and White River. A burned-over area of 50 acres was planted on a steep north slope at an altitude of about 10,000 feet. It was a difficult planting chance, but the ranger crew averaged 517 trees per man per day.

Cooperative Fire Prevention: Ranger Stavely of the Cochetopa Forest has interested stockmen in the vicinity of Powder Horn and Iola in the matter of fire prevention to such an extent that they have volunteered to equip and maintain two fire tool caches on a large area of timbered land outside the Forest, used by them as range. The area is proposed for addition to the Forest.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Stockmen on Tonto Hard Pressed: 27,317 head of cattle were permitted from 5/1/21 to 6/15/21, of which 3,578 have been removed, leaving 23,739 in trespass or to be covered by extensions. Trespass fees on this number to 3/31/22 would amount to $67,656.15. The stockmen have submitted petitions requesting extension in permits, and protesting against trespass action on the ground that it has been impossible to remove the stock, due to lack of market and drouth conditions.

District Fire Record: Although on several forests the fire season was longer than usual and the country drier, the District as a whole has had only about 350 fires. This is fewer than in any other year of the last five. On the other hand, it has cost more to extinguish fires this year than ever before, due to the exceedingly high cost of 4 or 5 large fires. The decrease in the number of fires is due almost entirely to about 100 less fires on the Coconino. Other Forests run about the same as in former average years.

Another Pueblo Flood: Pueblo, Colorado, is not the only Pueblo that has recently suffered by the high waters. The Taos Indian Pueblo which lies on both sides of Taos Creek was dangerously threatened last Wednesday when that stream rose higher than ever before recorded by Indian lore or record."

"Slonny" Takes New Job: The resignation of Telephone Engineer L. V. Slonaker has been received, effective August 1. It is understood that Slonaker has accepted a position with a Washington, D. C. electrical firm at a considerable increase over his present salary. Nearly 10 years of service in the District are terminated by this resignation, Mr. Slonaker receiving his first appointment on the Florida Forest in 1911 as Forest Guard. Seven years of this period were spent as a member of the District office with an interval of two years, however, in military service, most of which was in France with the 20th Engineers.

Drought in Gila Valley: "Never before in my 18 years experience in Arizona have I seen drought conditions as bad as they are at present in this section of Arizona," says T. T. Swift, Forest Supervisor from Safford.

Mr. Swift states that streams and springs on Graham Mountain, which have never been known to fail in past years, are drying up. The scuroe of Safford's water supply in Graham Mountain is exhausted and the town is now dependent on water drawn from wells. Several hundred campers from the valley who were scattered over the mountain, have been concentrated at four places as a precaution against fires. There are eight fire guards stationed on Graham and water has to be packed to six of these stations."

Treed: Perched like a treed mountain lion on top of a tall pine on Little Pine Top Mountain is Scaler DeWitt in his improvised lookout, temporarily filling the position of watchman of the brush strewn Apache Company cutting area. The company has ceased operations, leaving only a watchman and fire guard at camp No. 4. You will be informed about it if you light your pipe between Pine Top and the reservation fence.

Mulder Goes to New Work in Alaska: Assistant Engineer J. C. Mulder has accepted a position with the Federal Water Power Commission. He will be assigned to Alaska on August 1, and his duties will consist in making reports and investigations on water power projects in that territory. Mr. Mulder has been on minor forest road and trail work since May 1919. Prior to that date he was with the Geological Survey and with the Bureau of Public Lands and Public Works of the Philippines serving for 14 years in the Islands.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Girl Scouts to Hear Talk on Forestry: Miss Stone left Monday evening to participate in the Girl Scouts' outing at South Fork Camp near Ogden. Miss Stone, who is a Scout Captain, will, during the period of the camp, talk to the various troops in camp on forestry and the work of the Service.

Community Sites Leased: Two community sites were leased during the month, one to the Southern Idaho Baptist Assembly near the Easley Hot Springs, and the other to the town of Richfield on a tract near the Russian John Ranger Station. On the 29th and 30th a party of Short Line officials and residents of Pocatello were taken to Red Fish and Alturas Lakes to select a site for a Boy Scout camp.--Sawtooth.

Camps Fitted Up: Ranger Green has just completed setting up forty tents for the Utah Outdoor Association and the Rotary Camp. He has made forty bedsteads and forty tables; set up the stoves; secured a man to run a store, which is now constructed; and secured a man to operate a dairy for the benefit of the public.--Wasatch.

Camping in Full Swing: Last Sunday Ranger Staker had 147 automobile camps in his five miles of patrol in Big Cottonwood Canyon. On one camp ground alone, he picked up four gunny sacks full of newspapers.--Wasatch.
(Why not make a few of the motorists do K. P. and learn a lesson?--Ed.)

Highway Booms Lehman Cave: Lehman Cave is attracting considerable attention in connection with the completion of the Grand Central Highway. During the past month, delegations from Salt Lake, Eureka, Delta, and Fillmore, Utah, visited the cave, which is about six miles off the highway between Ely, Nevada, and Delta, Utah. Representatives of the Delta and Salt Lake Commercial Clubs expressed a desire to feature the cave in their advertisements.--Nevada.

Frosts Cause Damage: The severe frosts over this entire section July 2 and 3 did much damage to the range and untold injury to farm crops in the valleys adjacent to the Forest. The heavy wind on Saturday blew down more trees than did all the winds for several years past. The mercury dropped to 24 degrees at the Great Basin Experiment Station July 2. In the Sanpete Valley old residents claim that about 1882 similar frosts occurred about July 9 which froze much of the wheat.--Manti.

Ranger Bill Says:

Last week the Super. spent $3,000 in six days controllin' a fire, and got a big "puff." This week I saved $3,000 on a fire by waitin' four days for the rain to put it out, and got H---.

Clothes don't make the man, but a uniform might be the makin' of a lot of new habits among the Rangers, says Jewel Dawn our Steno.

Several tourists recently mistook the Maybell Ranger Station buildings for a village.

DISTRICT 5 - CALIFORNIA DISTRICT

Heavy Tourist Travel to California Forests: Reports received from all over the State indicate a particularly heavy travel this summer to all the Forests. Resorts report that they will be full up during the month of July and campers are everywhere.

A recent 3-day check on the Lincoln Highway at Placerville showed an average of 50 automobile parties per hour going through en route to Lake Tahoe. This season promises to beat all records for travel and shows more clearly than ever the need for more and larger public camps on all the Forests.

Cooperation in Fire Prevention: The Hazard Gould Company, dealers in sporting goods at San Diego, are printing the following on all publicity matter they send out:

"Development of southern California depends primarily on her water supply."

"Don't throw away burning matches or tobacco."

"You can help protect the watersheds by being careful with fire."

"Don't build a camp fire near any brush or other inflammable material and be sure to completely extinguish the fire before leaving."

"Your favorite camping place or fishing grounds may be completely ruined by carelessness with fire."

Tahoe PublicCamp Popular: On July 3 to 5, a total of 63 automobile parties registered at the Tahoe PublicCamp on Lake Tahoe. These parties contained 226 people and over 80% of them stayed during the three-day period.

Indian Relics Found on Santa Barbara: Ranger Forsyth stopped in the office the other day and mentioned a rather interesting topic regarding the plowing up of old Indian relics on the Santa Ynez Road job.

During the past three weeks the workmen have discovered several Indian relics during their excavation on the road about 1½ miles below Paradise Camp on the Santa Ynez River. They found many pieces of broken mortars and pestles and recently plowed up three large cylindrical beads or some kind of a relic about an inch in diameter, four inches long with about a half-inch hole through it lengthwise. Forsyth thinks they are in an old Indian burial ground.---T.W.S.

Air Service Selects Camp on Plumas: After inspection of portions of the Stanislaus, Eldorado, Tahoe and Plumas Forests, the U. S. Air Service has selected a site in the Lakes Basin above Blairsden on the Plumas for its summer rest camp and the site is now being prepared for occupancy. The search for the ideal site was made by a flying squadron of Forest and Air Service men, who traveled in everything from airplanes to flivvers and even made some of the journey on foot.

DISTRICT 6 - NORTH PACIFIC DISTRICT

History Repeats: Ten years ago the Forest Service, with a small amount of cooperation, built an 80-foot span bridge across Rock Creek, on the North Umpqua trail. Last fall the bridge collapsed. The County was persuaded to allot $1,000 for a new structure, but the County Engineer's estimate was $1,600. No one was willing to undertake the project and after weeks of delay we have decided to repeat the job of a decade ago. Deputy Supervisor Bonebrake, who worked on the old bridge as a Ranger, will supervise the construction.---W. F. Ramsdell.

Volume Growth of Yellow Pine: The fact that there is no net annual volume growth in the virgin yellow pine forest is hard, perhaps, for many Forest officers to realize. Annual volume growth takes place, of course, but owing to the mixture of the age classes, loss by death of overmature trees occurs from time to time, and this offsets the annual growth. The gross annual volume growth made by the average virgin stand in Oregon amounts to about 160 board feet per acre. Thus a loss by fungi, insects, or windfall of one mature or overmature tree containing 1,600 board feet would cancel the total annual volume growth made on all the trees standing on one acre in 10 years. The rate of loss in virgin stands is not known, but for cut-over yellow pine stands in Oregon it has been ascertained conservatively at one tree over 12" d.b.h. per acre in 20 years to 25 years. In virgin stands it would obviously be more rapid. It is well to mention here that in the reserved stands resulting from selection cutting on timber sales, there is a net annual yield. The yellow pine study conducted in eastern Oregon has determined this to be about 130 board feet per acre per year in the Blue Mountains.---R. H. Weidman.

Service Bulletin

U. S. FOREST SERVICE
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LOUISIANA TO THE FORE

(The following clauses were recently added to the State Constitution of Louisiana. In some respects they are the strongest constitutional provisions dealing with forestry which any State has adopted, particularly the last sentence of Article VI, Sec. 1.)

CONSERVATION IN THE CONSTITUTION OF 1921.

Article V.

Executive Department.

Sec. 1. There shall be a Commissioner of Conservation.

Sec. 18. The Governor shall, by and with the advice and consent of the Senate, appoint for the term of four years a Commissioner of Conservation, and in the case of a vacancy for any cause, he shall by and with the consent of the Senate fill the office by appointment for the unexpired term.

Sec. 29. The Commissioner of Conservation shall receive a salary of five thousand dollars per annum, payable monthly on his own warrant.

Article VI.

Administrative Officers and Boards.

Sec. 1. The natural resources of the State shall be protected, conserved and replenished, and for that purpose shall be placed under a Department of Conservation, which is hereby created and established. The Department of Conservation shall be directed and controlled by a Commissioner of Conservation to be appointed as elsewhere provided in the Constitution who shall have and exercise such authority and power as may be prescribed by law. The Legislature shall enact all laws necessary to protect, conserve and replenish the natural resources of the State, and to prohibit the waste, or any wasteful use, thereof.

Sec. 2. Forestry shall be practiced in the State under the direction of the Department of Conservation, and the Legislature is authorized to make provisions therefor.

Article X.

Revenue and Taxation.

Sec. 1. For the purpose of encouraging the reforestation of denuded lands, contracts fixing the assessed valuation of the specific lands for the duration of the agreements are hereby authorized under such regulations, terms and conditions as may be prescribed by law.

Article XII.

Public Education.

Sec. 17. After July 1, 1922, and until Jan. 1, 1925, the State severence or license tax on natural resources up to five million ($5,000,000) dollars shall be appropriated to the said Louisiana State University and Agricultural and Mechanical College for its maintenance, support and improvement, and for the construction of additional buildings and equipment; provided, that there shall be first reserved and appropriated annually out of the proceeds of said State severance tax or license not exceeding two hundred and fifty thousand ($250,000) dollars for the supervision and collection of the tax or license and the administration of conservation laws.

Fire As News

An editorial in a recent southwestern paper commented on the fact that whereas ten years ago a forest fire burning up a township of good timber was covered in two lines in a newspaper, to-day a fire of several acres received more than that amount of space, and a large fire was worth columns and big headings. The paper considered this an index of a changed public attitude toward the subject of forest preservation brought about through the education and awakening of people to the serious economic menace of these fires.

Newspapers print what the public wants to read about and what they are interested in. If they didn't, they would soon go out of business.

To keep alive this interest by furnishing live, quick, full news of forest fires is a field of education and publicity that every last forest officer needs to be alive to. The dope on a fire is the cheapest publicity, the most widely read educational material we can hope to get out. It is propaganda in its most subtle form--real news.

The united effort in putting into circulation the fire story, its thrills, its damage, its effect and its cost, and the story of the "fire bug" caught and brought to justice is worth the efforts of a dozen forest protection weeks of endeavor to get folks to listen to a proclamation, a lecture or look at pictures or read a mimeographed sheet of dull facts. Where the forest protection week reached one person, the fire news story reaches ten.

Tell it to 'em!--E.P.A., D-3.

Secretary Alive to National Forest Problems

By Will C. Barnes

Whenever we have a new Secretary of Agriculture there is always a deep interest among all Forest officers as to the attitude he will take toward our work: Does he come among us prejudiced against our policies and methods? Will he understand us and appreciate our point of view?

With each new Secretary, especially where it involves a change in politics, there is always a flood of appeals to him from individuals who hope that a man of their political faith will reverse the action of his predecessor, whether right or wrong.

A number of such appeal cases have come to Secretary Wallace recently concerning grazing decisions. One was carried to him by a prominent western Senator, who discussed the case with Mr. Wallace, who then called on the Forester for a report. This was furnished, together with a letter to the Senator. The Secretary accepted the letter we sent him for signature, but added to it several paragraphs which he evidently dictated himself and which show very clearly that he is alive to our policies and feels we are administering matters on the National Forests in a satisfactory way.

One of these paragraphs was as follows:

"I believe the Forester has studiously endeavored to preserve to every legitimate homesteader,both within the boundaries of our National Forests as well as outside, their priorities and preferences gained by the use of ranges included within the National Forests."

In closing this letter, Secretary Wallace added the following:

"In the administration of the National Forests the Department from time to time encounters circumstances similar to those in the present instance. I have looked into several such cases, and I have been pleased to find that beyond any doubt the responsible officers of the Forest Service are doing everything possible to manage the affairs of the Forests with equity and justice to all concerned."

Such an appreciation of our efforts by the Secretary should be an inspiration to every one in the Service to keep up the good work and continue to merit his confidence.

"How to Know 'Em"

P. A. Thompson's query "Do You Know 'Em by Their First Names?" appearing in the Service Bulletin for July 11, has been perused with interest. With his premises and conclusions, no doubt practically all Forest officers interested in things botanical will substantially agree.

The Washington office keenly realizes the need of publications of the character indicated by Mr. Thompson, and, a number of years ago, succeeded, by dint of much effort, in getting our notes on National Forest grasses printed but, since it was not feasible to have such notes "published," keys and illustrations had to be omitted. Dr. Sampson has since gotten out (in Dept. Bull. 545) his "Important Range Plants," in which appear reproductions of the author's remarkable photographs of 48 different important National Forest range species growing in District 6. Thompson can get a copy of this gratis. In Dept. Bull. 772, "The Genera of Grasses of the United States," by Dr. Hitchcock of the Bureau of Plant Industry, Thompson will find a veritable storehouse of American grass-species pictures; he can procure a personal copy of it for 40 cents from the Superintendent of Public Documents. Mrs. Edith S. Clements, wife of the famous ecologist, Prof. Frederic E. Clements of the Carnegie Institution, published in 1915 a very attractive book called "Flowers of Mountain and Plain," issued by the H. W. Wilson Co., New York, N. Y. This book consists of 25 plates on which are depicted 181 western plants in their natural colors; practically all these plants, or at least their congeners, occur on the Colville Forest. This book is out of print, but a second edition is now in press. The old price was $1.50, but the new price will probably be around $2.50.

The undersigned has been working for some time on a proposed publication of National Forest "browse" species, with keys, glossary, generic descriptions, etc., and a considerable number of illustrations has been prepared therefor by Mrs. Annie R. Hoyle, the botanical-artist in the Washington office. There is yet a large amount of work to be done, however, before the data on the 6,000 specimens in our collection will be ready for the press.

In thumbing over our list of National Forest plant collectors, I find the name "P. A. Thompson" indexed as collector of only a very few plant specimens from the Colville Forest. I realize that this list is not complete and I may have overlooked some. But I believe there is no way by which a person can familiarize himself with plants so effectively as that of collecting, pressing, and keeping them in a herbarium for reference. Permit me respectfully to suggest that when Thompson "next doth ride abroad" over the Orient District he collect some of these Colville plants whose "monickers," front and hind, now appear so furtive and elusive, and that, with each specimen, he get all the pertinent ecological and economic data that are provided for in the Service Form 767. After he has had his specimens properly identified, and the names are constantly before him for reference, he will be "all set" for the next visit of that erotematic father of his.

Then, as that father fondly beholds his offspring, his bosom will swell with paternal pride; "My boy is there," he will exclaim, "'Behold, the one-half of the greatness of his wisdom was not told me! ** He speaks of trees, from the cedar tree that is in Lebanon even unto the hyssop that springeth out of the wall. ** He is wiser than Ethan the Ezrahite, and Heman, and Chalcol, and Darda, the sons of Mahol'".--Daytonius, Washington.

Library Presented to Supervisor

By Q. R. Craft, D-2

Unique in Forest Servic history is the library composed of 100 books of travel, adventure, nature study, and standard works, which grace the office of the Supervisor of the Minnesota National Forest. The books are contained in handsome library sections, upon the top of which appears an engraved silver plate:

> "Presented to the Minnesota National
> Forest by the Parents of William D.
> Harris, of Minneapolis, and S. Thayer
> Bass of St. Paul, Minnesota, in loving
> acknowledgment of service rendered in
> summer of 1908."

Library Presented to Supervisor (Cont.)

Upon inquiry, it was learned that in the summer of 1908, William D. Harris, a graduate of Yale, and his friend, Thayer Bass, shipped their canoe to Cass Lake, and started one Sunday afternoon to make the journey down the Mississippi River to Minneapolis. They had proceeded but a short distance when a squall struck them, overturning the boat.

Persons on the shore who had seen the boys embark were naturally apprehensive when the storm arose, and although they had not witnessed the accident, they feared the worst when they saw the overturned canoe floating on the lake. Supervisor Marshall was at once notified, and since the exact location of the accident could not be determined, it required two days of dragging the lake bottom to recover the bodies. They were found in deep water in the main channel of the Mississippi River, which flows through Cass Lake.

The heart-broken parents appreciating keenly the prompt action to recover the bodies, desired to reward Supervisor Marshall and his assistants. When they found that remuneration would not be accepted they wrote to the editors of three outdoor life magazines and the librarians of Minneapolis and St. Paul, asking them to submit lists of 100 books to make up a library suitable for foresters. From these five lists the books purchased were selected.

News--As It Should Be Writ

Clifford Rust, a tourist from Melbourne, Texas, was rescued from two feet of snow near the top of Pike's Peak. Rust, in company with Otis Gillispie, a local youth, started to climb to the top of the mountain, but they were caught in a severe blizzard and lost their way. After battling the elements for hours, the Southerner gave out only about 500 feet from the top. Gillispie wrapped his helpless companion in his own coat and struggled to the summit house, reaching there at midnight. A rescue party was sent out and succeeded in finding the freezing boy.

Let's Have the Uniform

I favor the uniform. I have worn it for more than ten years. Compulsory or not, I shall continue to wear it; for it is the best and most serviceable clothing for our work to be had. The prices, however, should not be more than the prices for the same thing furnished the Army. Simply because the shade is different by a degree, we are asked to pay three to six times the price the Army pays for the same goods in O.D.

Let's have the uniform, have them fit, keep them clean, and pin your badge on straight. Keep shaven; one can't look clean without it. I don't mean be a dude, but don't be sloppy. Did you ever notice that as a rule the successful men are the most careful of their personal appearance?--R.A.Rodgers, Coronado.

WASHINGTON NOTES

Former Asst. District Forester R. F. Hammatt, District 5, stopped in on his eastern trip the other day to say "Hello!" He says he is greatly enjoying his new work with the Redwood people, and is feeling fine. Who wouldn't when they don't have to live on five plunks a day, including tips and laundry?

New Faces in Old Cases: There has been a great amount of trouble and dissatisfaction with the Atlas books as first designed, owing to the loosening of the leather from the backs of the 357 volumes which constitute the Washington Atlas. We were unable to find an adhesive paste or glue which would hold the leather to the aluminum or steel backs. After trying out various methods suggested, which proved unsatisfactory, it was decided to have the leather removed and the backs enameled, the color of the enamel being the same as the finishing on the covers. The same color of paper was used for indexing. The lettering was done with gold paint, mixing in just enough glue to keep the gold from smearing or rubbing off. In order to fasten the index strip to the book we used a transparent celluloid and crimped it to fit the back of the binder.

The celluloid was thoroughly heated just before crimping to fit the back of the book in order to keep the celluloid from breaking.

This bit of information is passed on, thinking it might be helpful in connection with the District Atlases.--G. B. Bruce.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Prehistoric Ruins: Under authority granted by the State Historical and Natural History Society of Colorado, a party of eight men under the supervision of J. A. Jeancon, Curator of Archaeology and Ethnology, are engaged in the work of excavating the Chimney Rock Cliff Dwelling within the San Juan Forest. They have reached a depth of 16 feet, and in the main building on which they are working have found 22 rooms. This is thought to be one of the oldest ruins which has been discovered. Very little pottery has been found, and but few trinkets.--H.E.French, Durango-San Juan.

Cross On Mountain Imperfect This Year: District Forester Peck and Supervisor French went up on Battle Mountain, near Red Cliff, recently to get a view of the cross, for which Holy Cross Mountain and the National Forest are named. This cross is formed by snow lying in the deep crevasses near the peak of the mountain. It is usually visible for about six weeks in mid-summer, after the bulk of the snow on the mountainside has melted. It was found that this year one arm of the cross is very imperfect, owing to what appears to be a rock slide.

Considerable interest has been attracted to the cross during the last year because of a movement which has been started to build a road to some accessible point where a good view can be secured of the cross, with the idea of establishing a shrine where the members of the Catholic Church and others can hold services.

Exclusive Fishing Rights Questioned: For some time an effort has been made to settle by a friendly suit the right of a grantee, (under the Irrigation Act of '91), to the fishing privileges on reservoirs constructed under the grant. A great many lakes and reservoirs in District 2 are used for fish propagation. These are covered by a fish culture permit issued by the Forest Service, for which a charge is imposed, the grantee objecting, naturally, but accepting the permit rather than go to the expense of a suit to determine his rights at law. A grantee on Grand Mesa, within the Battlement National Forest controls 13 lakes used for irrigation and, incidentally, for fish culture. These lakes are considered by the State Game and Fish Commission to be the finest natural spawning grounds in the State, and the best for artificial propagation. The grantee has transferred to a resort company its exclusive boating and fishing privileges upon the lakes and has secured from the State Game and Fish Commission the exclusive right to take all kinds, and in any quantity, of fish within the waters at any time. The resort company has never attempted to exercise its exclusive rights, and its members fish only in the legal manner. These lakes are used more extensively for fish culture than any others in the State and it would afford an excellent opportunity to test the question; but the company does not exclude any one from fishing and makes no effort to exercise its exclusive privilege in any of the lakes. But the fact that it has secured from the State the right to exercise exclusive jurisdiction, yet makes no effort to exercise that right, is indicative of doubt on the part of the company as to the value of the rights of transfer by the grantee and the permit from the State.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Costly Stock Water: The stock water situation on the Tusayan is becoming very acute. This is especially true on the Grand Canyon Division and the Verde District. Nelson Puntenney, on the Verde District, is shipping water in on the railroad to water his stock at Wood Spur near Cedar Glade. Unless it rains within the next week, Martin Buggeln, of the Grand Canyon Division, will have to ship water to Apex Siding for his cattle.

DISTRICT 3 (Cont.)

Faith Without Work: If you found a pile of flat bottles in the back yard of a prohibition lecturer, would you think better or worse of the doctrine of prohibition? How attentively would you listen to his alibis?

If the public sees a "skinned" pasture behind a ranger station, do you expect the public to think better or worse of our doctrine of range conservation? What do you think the Forest Service ought to do with, to or for that ranger? How attentively do you expect the public to listen to our alibis?

Another Pueblo Flood Victim: Cone Webb shipped 220 head of cattle from Globe to Denver on May 31, but owing to the freight embargo at Pueblo on account of the flood, they had to be routed to Kansas City and did not arrive in Denver until June 12. Mr. Webb accompanied the cattle as far as Dalhart, Texas. He then turned them over to a livestock commission firm in Denver. The cattle arrived in Denver in such shape that the commission house would not show them to prospective buyers and sent them on to pasture in Montana. Mr. Webb has received no statement of the expense of shipping and is still wondering if he will not have to make another shipment to cover the costs.

Coronado Has Oil Well: A. F. Wulfjin, a cattle permittee on the Whetstone Division, in boring a well for stock water, struck an oil shale and seep at 380 feet, which caused quite an excitement among the people of the surrounding towns.

Clean-up Week Did You Say?: How's this for an example of the way it should be done, and as a perpetual thing?

"If we have overlooked the pesky can, it must be rusty and hid under a bush; if a bottle, it is colored and only the splinters remain and the children will find them as they go bare-foot after school; if rats and mice, they are old graybeards and know the ropes; if flies, they are newcomers, as we have the rest on paper; the other vermin,we never did have them, only the measles. To get these results, we use Old Dutch Cleanser, Ivory Soap, Sapolio, warehouse brooms, rat traps, fly paper and mostly elbow grease."

Eagles Convention on Coronado: Thirty-four eagles in one flock were noticed circling above Cathedral Rock south of the Portal Ranger Station early in the evening of July 8. This number was gradually augmented by pairs and trios of birds until the band of marauders numbered 51. Suddenly the maneuvering ceased and away soared the flock in battle array toward the southeast.

West Texas Migration to Pecos: The summer home business is picking up on the Pecos. Municipal areas have been selected by three western Texas cities, and several applications have been received recently for individual home sites.

White Mountain Barbecue: The barbecue held at Sheep Crossing July 1 by the White Mountain Sportmen's committee was a big success. A good attendance of local citizens and many from various parts of the State participated and a lively discussion of the fish and game question followed, arousing a splendid sentiment in favor of more efficient protection and propagation of the fish and game supply of the State. An organization committee framed a resolution that a meeting for organizing a State-wide game protective association be held in Prescott just preceding the State fair in October.

Details of Mazatzal Fire: On July 4th the Tonto outdid all previous records in an exhibition of fire works on the highest point of the Mazatzal range, which resulted in a camping trip to that locality by about 100 men from Pine, Payson, Tonto, Roosevelt and Globe who were employed from July 4 to 8 inclusive in stopping the fire, which covered in the neighborhood of 2,500 acres, at a cost of between $2,500 and $3,000 for labor, supplies and transportation. Some 2,000 acres of dense pine reproduction was destroyed.

The celebration was caused by lightning striking a dead pine tree near the summit of the Mazatzal Peak.

Ranger Bill Says:

Keep busy, and you won't have so much time to grouch about the weather.

The editor of our country paper says he'll print my Service story, writ for the Sat. Even. Post, as soon as he has any "filler" space.

While you're calculatin' "elapsed time" on that last fire, don't forget to figger in the trail improvement money you didn't get, says Smoke Chaser Ketchum.

DISTRICT 5 - CALIFORNIA DISTRICT

Careless Camper Has Troubles: Justice H. A. Decker of San Fernando is getting tired of the carelessness of campers in that vicinity. Witness the fact that H. Benjamin of Los Angeles, who left an unextinguished camp fire in Big Tujunga Canyon on the Fourth of July, attempting to buy off Patrolman H. B. Tilton before witnesses and otherwise making himself obnoxious, was greeted with a fine of $200.00 when he pleaded guilty in Judge Decker's Court on July 8. Mr. Benjamin has further troubles, since he and another party were arrested on the 3rd for wading and bathing in the stream. Action on this charge is under way.

Boy Scouts Fight Fire: On his way to the Kellam fire on the afternoon of July 1, Ranger Roy Tuttle of the Skyland Division, picked up an emergency crew at the Los Angeles Playground Camp at Seeley Flat. In this crew were four scouts ranging from fourteen to sixteen years of age. They did the work of grown men from 5 P.M. July 1 until 9 A.M. July 2. They held their portion of the line where men impressed on another portion of the line deserted it and allowed the fire to get away. The following day Scoutmaster Harvey Cheeseman took fifteen or twenty scouts, patrolled portions of the line, feeding themselves and charging nothing for their services. Ranger Tuttle says, "There was lacking that spirit of being on a lark and each youngster seemed to realize the seriousness of the task before him, the result being that our control lines were held in good shape."

Visitor From Forest Products Laboratory: Ernest Bateman, of our Forest Products Laboratory at Madison, Wis., arrived at the District office on July 13. Mr. Bateman is one of the highest authorities in the United States on the chemistry of creosote and his researches bid fair to revolutionize our understanding of how creosote protects wood from decay and marine borers. He is here to plan for the cooperation between the Laboratory and the work in the chemistry of creosote with respect to marine borers.

Unique Exhibit for Ferry Building: The California Development Board and the California Industries Association are planning the installation of a very elaborate and absolutely unique exhibit in the Ferry Building to take the place of the antiquated collection of pickled fruits and vegetables which has been so long an exhibition eyesore.

The plan calls for a modelled panoramic group with painted background running along the east wall of the Grand Nave. It will show in panorama the topography and resources of the whole State of California with modelled figures, etc., in the foreground and continuing on into the painted background. The group would be in five sections of varying length, necessitated by the exits from the ferries, but totalling almost 500 feet. The cases would be 17 feet deep and 12 feet high. The glass in the front would be 4½ feet wide, 6½ feet high at top, and would present a window looking into the group cases from both front and ends running the full length of the nave, and broken only by the necessary upright supporting posts of the case front.

Along the west wall of the nave smaller cases would house a complete classified exhibit of all of the agricultural and horticultural resources of the State displayed in a new and artistic manner.

It will probably be possible for the Forest Service to present through cooperation some of the things it is interested in, such as grazing, lumbering, hydro-electric developments and recreation, and with this in view we are cooperating in the planning of the work.

The exhibit would have an educational and advertising value almost impossible to estimate.--Paul J. Fair.

DISTRICT 8 - ALASKA DISTRICT

Timber Sale Receipts of the Chugach for the fiscal year 1921 were $6,401.73, a decrease of more than $4,000 from the year before. The number of sales made during the year were 79 as against 112 for the year previous. The material sold equaled 4,164,480 board feet, and consisted of sawlogs, piling, poles, railroad ties, cordwood and mining timbers.

About 5,000,000 board feet were cut under free use and administrative use permits during the year, the greater part of which was used by the Alaskan Engineering Commission on the Government railroad.

The slump in timber sales was the result of the limited fish cannery and mining operations. Last fall the market for canned salmon began falling and hasn't stopped yet, in consequence of which very few of the canneries operated this year. The copper market also went to pieces and the big copper mines of Prince William Sound are running at about one-fourth capacity. The canneries and copper mines are the principal timber users on the Chugach.--L. C. Pratt.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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SELLING FORESTRY

"The time is past when any commodity regardless of its merits, price or need, can be successfully distributed without extensive advertising. Large business houses are strong in their assertion that success has been due largely to the methods and the extent of their publicity campaign. Each of these successful houses, in addition to its traveling salesmen, spends large sums monthly for posters and signs. The effectiveness is very apparent when we think of 'Pillsbury Flour,' 'Camel Cigarettes,' 'Goodyear Tires,' etc., with which we have become familiar because of their extensive outdoor advertising.

"Regardless of the necessity of practical forestry, no great forward strides can be made until the people are familiar with it. We can not expect them to come to us for the facts. Responsibility for getting these facts to them rests with the foresters and we must do as all other successful organizations; we must advertise extensively. Practical forestry **** is bound to come, but the rapidity with which it advances will be directly proportional to the effort we make to 'sell our product.'

"The Department of Forestry (Pennsylvania) is 'Selling Forestry' to the people. District Foresters are the salesmen and sales in each District depend largely on the District Forester's efforts. We do not differ materially from other business houses, and they have learned that poster and sign advertising is essential in getting the people acquainted with their products. It is very important that we should use posters and signs as extensively as resources will permit.--John W. Keller, Pennsylvania Dept. of Forestry.

No Trains on Dry Days

One of the most unique time-tables issued by any railroad in the United States has just come from the printers and is now in effect. The table was issued by the Kushequa Route, the little mountain railroad in Pennsylvania.

The Kushequa Route railroad is the only connection the town of Smethport, county seat of McKean County, has with the outside world. Smethport is a town of probably 5,000 inhabitants way back "nowhere" about thirty-five miles from Bradford.

But to go back to that time-table. It has all the dignity of one of those issued by full-grown railroads. It has the usual announcements. It has one unusual one. Across the top is the wording: "Time-table No. 41. Fire season 1921."

Then in bolder type:

"No trains east of Kushequa on dry days."

The Kushequa Route passes through a large stretch of woods from one end of the line to the other. Every year up in the mountains there are many forest fires, some dangerous and costly.

The equipment of the Kushequa Route local is not modern, and it has not been equipped with spark arresters. On the contrary, the little train toiling up the mountainside gives quite a correct imitation of a Pittsburgh blast furnace in full eruption. Naturally the sparks fly high, wide and wild. Therefore no person along the Kushequa Route criticises the railroad company's endeavor to prevent forest fires.

Salting Practice on the Kaibab

(The following summary of successful application of proper salting methods is taken from Supervisor Roak's annual grazing plan. The range is in the yellow pine type and is heavily stocked with cattle as well as deer, and part is also stocked with sheep. The application of proper salting as a means of securing adequate distribution of cattle is important on all Forests, and it is thought that the results here reported may be of assistance to officers on Forests where the stockmen are obstinate about trying out improved salting methods.--W. R. Chapline).

Salting is unquestionably the big factor in the distribution of stock on this range. The reason that salting is a prime factor is that the water is scarce and there are few chances of developing water in places where it will have a material effect on the distribution of stock.

It was the general opinion that salting away from the water could hardly be figured to effect better utilization of the forage, since about every spear of feed on the Forest was utilized, but it was maintained that salting away from the water would effect better distribution. It was pointed out how the cattle congregated at the waterholes and how they came in about as regular during stormy weather to the waterholes for the especial purpose of licking salt, and when they did come in they hung around for hours at a time.

Jacob Lake was the most conspicuous example of the conditions which we contended were in existence, and this year we salted the country away from the water, putting salt at places which appeared to be the logical location of salt and putting other salt in places where it would appear that cattle never would find it. At Jacob Lake there was a piece of salt weighing several hundred pounds in the corral just outside the salt house which we allowed to remain. The results of this salting exceeded our highest expectations in that cattle came to Jacob Lake, drank and immediately left and very few cattle ever touched the salt in the corral; in fact, the bulk of it was there this fall. During stormy weather for days at a time the cattle did not come to water at all where formerly they would come in for salt. It can hardly be claimed that better utilization was effected by this salt, but most certainly better distribution was accomplished, and it was definitely established that salt can not be placed where cattle can not find it.

The most peculiar thing, however, was that the cattle were in much better shape in the vicinity of Jacob Lake than farther south on the mountain, while the feed in the vicinity of Jacob was not as good as at these other places. It is perhaps rather far fetched to attribute this to salting away from the water, but there was nothing else to attribute it to. It is, of course, too soon to say what effect this practice is going to have on the growth of forage, but undoubtedly it will help conditions in the immediate vicinity of the lake. For next year, to prevent waste of salt and obviate the necessity for hauling salt often, it is expected to construct substantial salt boxes.

This experiment has furnished conclusive proof that salting away from the water is the proper practice so that it is intended to put such salting practice into effect on the entire Forest.

Flyer Escapes from Volcano Pit

When his engine suddenly stopped 15,000 feet in the air above Crater Lake, Oregon, Thursday, July 23, Raymond G. Fisher, Forest Service pilot, was forced to land on a tiny island in the lake, which is in the pit of an extinct volcano with walls 1,000 feet high surrounding it. The plane was not damaged in the descent, but Fisher upon examination found four of the spark plugs of the engine broken.

Using the wireless set with which the machine was equipped, he succeeded in getting in touch with another Forest Service plane.

Flyer Escapes from Volcano Pit (Cont.)

This second flyer hastened to Medford, Oregon, and obtained new spark plugs for Fisher's plane. Arriving back at the lake, however, the rescue pilot found it impossible for another plane to land on the island to get the plugs to Fisher. Other Forest Service planes came up and sets of spark plugs were sent to earth by means of parachutes. Hunting with a torch Thursday night, Fisher found one of the parachutes, and the next morning repaired his machine and "took off" from the island, reaching the Forest Service airplane base at Medford safely.--Associated Press.

Right There Was Where I Made My Big Mistake

The Pine Knob Lookout reported a fire the other night about six o'clock. Said it was over in the Big Bend of Clear River, and looked like it might be a tree struck by lightning. I knew it couldn't run far down in that section, with the wind the way it was and the woods all damp, and besides, I had just come in from an all-day ride and was pretty tired, along with the horses. So I figured to eat a bite, turn in for a bit of sleep, and catch her early the next morning--but right there was where I made my big mistake.

New Southern Forest Experiment Station

The appointment of Mr. R. D. Forbes, formerly Superintendent of Forestry, Conservation Commission of Louisiana, as Director of the new Southern Forest Experiment Station of the Forest Service on July 19, marks the beginning of increased activity in research work on the many important problems connected with forestry in the southern pine region. For the present, the headquarters of the Station will be in New Orleans. Forest Assistant W. R. B. Hine has reported to Mr. Forbes as one of the four technical members of his staff. It is expected that Mr. Lenthall Wyman, formerly connected with the Forest Service at the Fort Valley Forest Experiment Station and in District 1, and more recently Assistant State Forester of Texas, will be appointed as a scientific member of the staff about August 1. Several possibilities, both within and without the Service, are being considered for the fourth place. Under Mr. Forbes' leadership splendid progress in the development of forest knowledge in this very important and heretofore neglected forest region is confidently expected.--J.K.

Beat Edison To It

(Try your luck on these questions without reference to sources of information. Prepared in part by M. H. Wolff, D-1).

1. What President created most of the National Forests in the western United States?
2. What does the Forester say is three-fourths of the forestry problem of the United States?
3. Name the different branches, and chiefs of branches at the Washington headquarters of the Forest Service.
4. Name the three chief divisions of the Federal Government.
5. What per cent of National Forest receipts are returned to the States for direct expenditure by them?
6. Name six States that have a State Forester.
7. What District has the heaviest grazing business (1921)?
8. Where did the Forest Protection Week idea get its start?
9. Name five National Forests in any District except your own.
10. Which is the most valuable, a ton of $5 gold pieces, or a half-ton of $10 gold pieces?

Well Paid Positions For Experts

The services of (1) An Expert in cotton cultivation, (2) A Forester competent to direct the cutting and marketing of grown timber, (3) A Live-stock Man, experienced in breeding and marketing beef and dairy cattle, as well as sheep, are required by the owner of an estate of about 200,000 acres in Madura*, southern East India. The land is abundantly watered and timbered and exceedingly fertile. The right man will be well paid and given wide discretion, but experience and a successful American record are pre-essentials to employment. Address, giving references, salary expected and length of time for which employment would be accepted, EAST INDIAN PLANTATION, Care Commerce and Finance, 16 Exchange Place, New York City.

*Note: Madura is an island just off the northeast coast of Java, about eight degrees south of the equator.

WASHINGTON NOTES

What's What: Congress is very busy these days on tariff, tax revision, farm credits, railroad finance, and other important administration measures. Reclassification of Government employees will probably not come up for consideration until fall. The joint congressional committee on reorganization of the executive departments has not met for two months, and it will be several weeks before the preliminary tentative plan will be ready to submit to the whole committee. Economy--efficiency plans, as formulated by Director of the Budget Dawes, are the principal topics of conversation in Government offices in this city these days.

Forest Firewarden, William Bradley of Mahoney City, Pa., in the employ of the Pennsylvania Department of Forestry, uses carrier pigeons between the fire line and his residence. When a fire is reported he goes to the fire with sufficient men and two differently colored pigeons--white and black. As he leaves, he stations a Boy Scout at the dove cote. If a white pigeon returns, the Scout understands that the fire is being controlled; if a black one returns, it means send more men and supplies.

Colonel Greeley, and Messrs. Kneipp and Peters left Washington on August 2 with District Forester Reed for a trip on the Monongahela and Unaka National Forests.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Pay As They Enter: About 30,000 non-permitted sheep each year use a high line driveway on the Uncompahgre National Forest, so it was decided to make a nominal charge for a crossing permit. The fee was fixed at 1¢ per head and during the past two seasons, nearly $600 has been collected; the amounts being paid in as the sheep leave the counting pens, and deposited with the Fiscal Agent as a cooperative fund for maintaining the necessary counting pens and clearing out the driveway.

Shortage of Sheep and Cattle on Forests: On some Forests, material shortages have developed in the number of sheep and cattle put on. For instance, the Gunnison is 21,000 head of sheep short and other Forests show similar shortages, verifying the previous prediction that while the usual numbers might be applied for, the stock were not in the country to be placed on the ranges.

Near Range War: Local cattlemen in Moffat County, this season, staged an old-time range controversy lacking only in the fact that there was no actual killing of men or sheep. Several bands of sheep had been given permit for range on the White River National Forest for the grazing season 1921, but in order to reach the ranges without shipping by railroad, had to cross considerable areas of public land, and in a few instances, private lands outside the Forest boundary. The cattlemen made their stand on the private land, refusing permission to cross with the result that only one band was successful in getting to the Forest range; the others were turned back and required to ship by railroad at almost prohibitive expense in order to reach one of the old established driveways.

Bootlegging in the National Forests: Fox Park, a village in the Medicine Bow National Forest, maintained under permit from the Forest Service, was recently the scene of much excitement as the result of a raid made upon the pool hall conducted by John Erickson. Last March, the Supervisor reported the existence of a still somewhere in the neighborhood of Fox Park and illicit traffic in liquor at the pool hall that operated under permit, and proposed that the permit be revoked. The Internal Revenue Department in Denver was furnished information, and the Service agreed to withhold revocation of the permit in order that the prohibition officers might have an opportunity of securing reliable evidence of the violation of the prohibition laws and prosecute the offenders. The Revenue officers were so slow to act, and the continued sale of liquor at the place was resulting in such a disorderly house and in so much drunkenness, that it was necessary for the protection of the saner element in Fox Park for the Forest Service to act without further delay. The permit was accordingly revoked on July 25. Later, information came from the Supervisor to the effect that on the same day the pool hall was raided by the State and County authorities and eight men arraigned before the Justice of the Peace at Laramie, July 26, all of whom entered pleas of guilty, seven for gambling and the proprietor of the pool hall for running a gambling house. Seven were fined $100 each and Erickson $300. He was also bound over to the Federal Court on a charge of selling liquor.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Game Preserve An Attraction on the Boise: There is a real game preserve on the Boise Forest. Not only is there game but it is sufficiently protected so that it isn't afraid to put itself on display when travellers come along. On a recent ride up the South Fork of the Payette River, elk, bear, mountain goats and deer in considerable numbers were seen. The State salts the game according to the Supervisor's salting plan and at some of the Ranger stations deer can be seen within a few rods of the house at most any time during the day.

Hearing in Fire Trespass Case: A hearing in the fire trespass against J. A. Clayville and Melvin Hurst was held at 1 o'clock P. M., July 12, before U. S. Commissioner Jackson and the defendants were bound over to appear before the September term of the District Court. The defendants built a camp fire on an old rotten stump and failed to totally extinguish the fire, though they were under the impression that it had been extinguished and they felt sure that it was put out. However, a few hours later, the stump was blazing and was extinguished by the complaining witness, Vernon F. Boren, Forest Guard. The defendants were located by Boren at Ustick, Idaho, July 7.--Boise.

Major Kelly is about to leave for a trip of three weeks duration over the Idaho, Boise and Payette Forests with Mr. Simpson and the Supervisors of the respective Forests. He has recently completed a trip of inspection on certain forests in D-5.

Forest Supervisor Grandjean is offering a prize of $5.00 to the Forest Officer who shows the quickest action in getting away for a fire. The conditions are that the Forest Officer must get away with his full equipment, saddle horse and pack horse or horses, loaded with the necessary tools and provisions sufficient to last him three days. The time will, of course, begin at the moment he receives the notification of the fire from a lookout or other source. The prize will be awarded at the end of the fire season and the time of get-away is, of course, when he leaves the Ranger Station proper or barn.--Boise.

****

WHY?

The storm that washed his field away,
Watered my field for the harvest day:
Lightnings that burned his proud abode,
Lighted my feet on a dangerous road:
Gales that hurled his ship to the deep,
Drove mine home to the harbor sleep.

The Kind of Campers We Like: A rather unique example of adherence to ethical conduct under trying circumstances comes from the Shasta, reported by that indefatigable young "go-getter," Leslie Solaro. The story concerns a Mr. Woods of Oakland, who, on a camping trip with his wife, built a fire in his stove in a swampy place, presumably safe; but apparently the fire preferred to burn outside of the stove rather than inside, and made a dash for the tall timber. Ignoring the fact that his new auto and all his camping equipment were doomed without immediate first-aid treatment, Mr. Woods started right after the fire and succeeded in checking it. Net result: A ruined pleasure trip, but a satisfactory entry on the credit side of Mr. Woods' ledger.

A Facetious Postmaster: Col. Arnold of the Air Service is preparing a book on various airplane landing fields in the several western States. Data on many municipal fields and fields near small towns are secured by sending a form letter to Chambers of Commerce, etc. At bottom of this form is space for additional remarks on points not covered. From the Postmaster at Daggett, Calif., the following additional remarks were received: "Good surgeon at Yermo, Graveyard near Daggett, County hospital at San Bernardino. Thank you, Postmaster, Daggett, Calif."--Marx.

Are All Los Angeles Tourists Like This? Four lads walked into the Clover R. S. the other day and asked, "What supplies have you in stock at this ranch?" The Ranger looked sorter vacantlike, never having heard the title of ranch applied to a summer ranger camp, and answered, "This is the Ranger Station." The wandering tourists began to take on something of the Ranger's blank look as they gazed from the bunch of "Ranger Kids" gamboling in the front yard to the bunch of stray sheep the Ranger had tied in the meadow, awaiting a chance to return them to their owner, and the calf tied in the meadow (belonging to the milk cow borrowed from one of the permittees on that range). Then one of the boys dug down and brought out a "Tourist Map" of the Sierra N. F., and finding "Clover Meadow R. S.," said rather sadly--"Doesn't this mean 'Clover Meadow ranch supplies?' We're pretty short on some supplies and expected to stock up here." Luckily, the Ranger had an oversupply of some of the things they needed, and was able to fix them up--but he has been wondering since whether the "Forest Signs and Symbols" are adequate for the average tourist or should the Southern California Schools include in their textbooks a treatise on some of the perplexing Forest Problems.--Ranger Boothe, Sierra.

Ranger Stephens To the Rescue: About 8 p. m., on July 9, the Strawberry dam on the Stanislaus partly went out. Four hours later Ranger Stephens was awakened by the ditch tender pounding on the window of his Station. Hastily dressing, and calling his Forest Guard, he made a quick get-away in his flivver to warn the visitors camped at the South Fork Bridge Camping Grounds. Arriving at the crossing he found the water up to the bridge, but took a chance and went across in his machine. By strenuous work he managed to awaken all the campers and get them onto high ground, although they had to leave their machines on the bottom. Luckily, the water went down considerably by morning, and the Lyons dam farther up the river held, so that the "touries" were able to return and gather up their effects and bale out their machines. Had the concrete Strawberry dam gone out, the major portion of the Stanislaus would have been deposited at the back door of the District Office.

Ranger Bill Says:

When it comes to gifts, I'd just as leave have a pair of gum boots as an auto on this District.

Its gettin' so that when my wife don't know where I am, the lady lookout does--so what's the use.

I wonder if the feller that started all this "no-smokin'" business knows Bull Durham from Piper Heidsieck.

The Oregon Skyline Trail is the title of a new map folder just issued by the Oregon Tourist and Information Bureau covering details of the walking trip along the crest of the Cascades from Mt. Hood to Crater Lake. The map and complete data relative to the trip were prepared by the District Office.

Fire Prevention for Oregon Schools: An interesting 30-page booklet outlining the course of study in fire prevention for public schools has just been issued by Mr. J. A. Churchill, Superintendent of Public Instruction for the State of Oregon. Notes to teachers and important facts to be considered in instructing pupils in fire prevention are shown for all grades from the first to the eighth. It is hoped that the school authorities of Washington may be induced to issue a similar booklet.

Weeds and Fire on the Oregon: Recently the O. W. R. & N. has had their "Weed Killer" working along the right-way along the forest boundary. The "Weed Killer" consists of two large flat cars with tanks of oil and a powerful blow torch. Steam for pressure comes from the engine which pulls the two flat cars. As the train moves slowly along the track, this powerful blow torch kills all the weeds on the track and along side the track. A large sprinkler extends beyond the flames, which prevents the brush from catching fire. Section men claim it is a great help in getting rid of weeds and in preventing fire.--Wiesendanger.

Merritt Goes North: M. L. Merritt, in charge of Improvement in D-6 and formerly Supervisor of the Deschutes and before that of the Philippine Bureau of Forestry, on July 1 became Assistant District Forester of District 8, with headquarters at Junueau, Alaska. He left early in July for Juneau, and shortly after his arrival there will go on westward to inspect the Chugach. Merritt has left his imprint on D-6, where he will be greatly missed by his many friends, who congratulate him on his deserved promotion to more responsible duties.

Air Celebration: Eugene is planning a monster air celebration on Labor Day when their Municipal Flying Field will be dedicated. Governor Olcott, Major H. H. Arnold and Capt. Lowell H. Smith of the U. S. Air Service, are expected to participate, as well as all the Forest Patrol planes.

Wallowa Old-Timer Gone: Ranger R. W. Flourney resigned on June 10 to engage in fruit-growing in Washington. He entered the Service in 1906, and has worked on Forests in California, Washington and Oregon. He is the third Wallowa man who has resigned since last spring and moved to northern Washington.

Wild Life Writers: Walter Prichard Eaton, the dramatic critic and nature writer, is making a tour of the Cascades chaperoned by F. H. Kiser, the photographer. Mr. Eaton will spend some time at the Boy Scout Camp at Wahtum Lake, as he plans to write a series of Boy Scout stories. In his talk to Portland Boy Scouts, he played up strong the part the Scouts could do in forest protection. Mary Roberts Rinehart, who expected to start on the Oregon Skyline trip about August 1, has had to give it up on account of a serious operation.

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More Education in Recreation

By D. F. McGowan, D-1

The tourist season is upon us. Scores of travellers are now entering the National Forests. Every State in the Union provides its share of the automobile pleasure seekers who wish to "See America First." On the average, these tourists possess the most meager information concerning the National Forests, yet they are of the best citizenry of the United States. Is the Forest Service overlooking a real "bet" in the handling of these people? The answer is "Yes." We get up a pretty folder showing the principal roads, include therein a few pictures of our beauty spots, print the "Six Rules," and then feel that we have done our job. Theoretically, the justificiation for

More Education in Recreation (Cont.)

printing these pamphlets is fire protection. We assume that if we suggest that care be used in handling fire in the forests, these tourists will accept our suggestions as Holy Writ. But they do not--and why? Simply because they know in but a hazy sort of way that forest fires are dangerous. Does the average tourist know anything about the Minnesota fire, or the Montana-Idaho fires of 1910 and 1919? No, he hasn't the slightest conception of the lives lost and property destroyed by these conflagrations. Does he realize that if he is careless with his camp fire he may be the cause of another holocaust? He does not. In his ordinary business life, forest fires have no place; he has not been interested in them. Consequently, he knows nothing about them. If so, why assume that Mr. Tourist, when he packs up the auto and tells his friends that he is off for the West, thereupon absorbs all of the available information concerning the National Forests and the danger in using fire therein.

Let us recognize this lack of information and then try to get over to the tourist as he is, the information we wish him to have. How can this be done? It can be done in part by changing our printed matter to supply the information the tourists should have. Let us change the keynote of our pamphlets from that of glistening waterfalls and leaping trout to the more serious business of growing timber and keeping it green. Should not our objective in our publicity printing be the fundamentals rather than the incidentals? The incidentals, of course, should have their place. Will not the tourist be more careful with fire if he is taught something concerning the real purposes of the National Forests? The answer is, "Yes." Let us then in our pamphlets and on our publicity maps throttle down on the purely recreational features of the National Forests. Let us see to it that every bit of advertising matter the Service puts out for the benefit of the tourist contains an intelligent review of the history and purposes of the National Forests, the need therefor in the economic development of the country, the danger of forest fires and the damage done by them. Include a few words about the worst forest fires. Then let us appeal to the man who is reading the pamphlet, that on account of the foregoing information he is asked to be careful with fire while in the National Forests. Will not such a line-up get results in fire protection? I think it will. The tourist has to be taught. He does not know. Is it reasonable to expect the eastern tourist to know when the average western town man living next door to the National Forests does not fully appreciate the purposes and achievements of the Forest Service in general, and particularly in connection with the fire-fighting game? If you Forest officers think this last suggestion is overdrawn, try it out on your friends and see what their answers will be.

(Here is a mooted question worthy of discussion in the Bulletin. Can you educate the ordinary tourist on a summer vacation? Is he out for study or for play? Will facts and figures on forest growth, fire damage, and lumber prices catch his attention, or is he more interested in beautiful camping spots, good fishing and hunting, and alluring roads and trails? Fire prevention is the kernel of the proposition, but what is the best kind of a sugar-coated covering to put around it, so the public will bite?--Ed.)

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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THE OLD, OLD QUESTION

By Crosby A. Hoar, D-2

At short intervals during the more than fifteen years of our existence, the uniform question has been resurrected and brought into the center of the stage. This time honored "goat" has become as much a part of our standard equipment as the badge or the Manual. No one has successfully ridden him yet, but there are indications that some of our daring young riders, and older ones as well, are sharpening their spurs for another trial. There must be fundamental reasons why the recurring efforts to popularize the Forest Service uniform have so far proved abortive. Some of them are readily detected and analyzed.

At an old-time ranger meeting a District office man made an eloquent plea for the uniform, citing all the standard arguments. Opposition was strong and opponents outspoken. Finally one, more hardy than the rest, rose and stated that he would withdraw his objections upon the understanding that every member of the Service, including the eloquent representative of the District office, should wear the uniform at all times when on duty. That ended the discussion. The answer was intended to be frivolous, but there was logic behind it. Efforts to promote the wearing of uniforms have come from the top down. They have bristled with arguments showing why the uniform should be worn, but few adherents of the uniform have shown an overwhelming desire to wear one. Nobody likes to be told what he must wear, but he submits with better grace if all Forest officers, without exception, are to be treated alike.

With all the propaganda that has been put put concerning the uniform, it would have been voluntarily adopted and worn long ago, if there had not been sound reasons against it. Forest officers very generally have tried the uniform with open minds and wear it when it suits their needs. The fact that they do not wear it more commonly means that it is not satisfactory for all uses. A man at a desk can wear any kind of clothes without more serious inconvenience than making himself conspicuous. A man in the field must have clothes suitable for the particular work he is doing. There are few men whose work, mode of travel, and climatic surroundings are as varied as those of the Forest officer. It is possible to run a motor boat in Alaska, ride a horse in New Mexico, and carry a canoe in Minnesota, with the same suit of clothes, or minor variations of the same; but in each place long experience has indicated a garb, which best suits the purpose. Anything short of the best is a handicap to the wearer, and sometimes a source of danger. It is possible to fight fire, climb telephone poles, build trail and represent the Service in town while wearing the same uniform, but either appearance or utility will suffer. When men buy uniforms from their own funds they don't have many suits at one time, nor is it always possible to change clothes between the fire and the town, or vice versa. No other clothes look as untidy as an untidy uniform. The man who is going for mail in his town uniform will defer resetting a telephone pole or scaling pitchy logs until a more convenient season.

The Old, Old Question (Cont.)

After all, is there much real need for the uniform? In more than ten years' experience, the writer doesn't recall hearing anyone outside the Service suggest them. Local officers soon become known to local people, and visitors to a Ranger's residence or a Supervisor's office seek the place rather than the man. There was a time when a uniform would have been a serious handicap in some parts of the West in dealing with the public. That time has probably gone by, but not long ago a Supervisor's homely appearance and ability to chew tobacco won the confidence of a user who had rejected all previous approaches by Forest officers. Does the uniform win us greater respect from the people with whom we deal? I think not. Uniforms are worn by military organizations to promote discipline, and by civilians whose identity and authority must be quickly established with the transient traveller--men who must be conspicuous. The Forest officer deals with fewer people, generally in small communities where he is known, and with time enough to explain his business. His authority is rarely questioned and his badge is sufficient evidence of it.

Let Ranger John Doe wear his Stetson, jumper, corduroys and high heeled boots, while Ranger Bill Biff arrays himself in trim coat, riding breeches and shiny puttees. Each has his following, but two-thirds of the simple straightforward people with whom they deal will turn to the man whose garb indicates familiarity with the field. Cleanliness may be next to godliness and personal neatness is always to be desired, but similarity in dress comes after efficiency in dress--a long way after.

Wireless Phones Successful in Idaho

By James E. Scott, D-4

Wireless telephone communication between Warren, Idaho, and Moore Ranger Station on the Nezperce, an air-line distance of thirty-five miles, was successfully established on July 15. Telephone Engineer R. B. Adams, on the ground and supervising the installation of the two "SCR-67-A" wireless sets secured from the Navy Department, conveyed this good news to the District Forester at Ogden in a telegram as soon as the first messages were successfully transmitted, and a week later reported continued and uninterrupted communication.

"R. B." now throws in with the "I told you so crowd."

Wireless telephony got off on the wrong foot in D-4 in 1920. The same two sets which to-day have successfully opened up a big stretch of the Idaho back country to vocal communication reached Ogden late in June last season. Hurriedly they were forwarded to McCall and from there rushed into the wild to provide a much needed line of communication. "R. B." was with them, but he never had a chance. The sets--badly shaken up by their long rough trip, were full of trouble--there wasn't another man in the local county who knew the first thing about radio sets and their use, and to top it off Adams himself was obliged to leave the scene of the tryouts and rush to Missoula to help in the bad fire situation which had developed in D-1.

And then the try-out fizzled--the people left on the ground couldn't make the sets work. From various quarters it was suggested that wireless was the bunk for our purposes--all right for "bugs" to play with or perhaps susceptible of successful operation by experts--but we've got to have something which the average man can handle without years of study and experience. "R.B." was pretty sick about it, but far from licked.

Last fall he brought in the sets--took 'em down by the furnace and went to work on 'em. He shook out kink after kink--talked to those sets like a pirate captain and one fine day emerged with the declaration that he was ready for business.

A big antenna was erected on the roof of the Service building in Ogden and one set installed. The other went down to Salt Lake and was hooked up to the Air Service antenna at the Aerial Mail Station, 37 miles from Ogden. The Mayor of Ogden and Salt Lake representatives of the Chambers of Commerce and the press, and a few Forest Service men were invited to the little party.

"R. B." was sure happy that night, as everybody on the Ogden end conversed without a hitch with everybody on the Salt Lake end--and as Joseph C. Smith's orchestra on a Victor in Salt Lake entertained us here with "Whispering" and other selections.

Still not satisfied, the same stunt was worked successfully between Salt Lake and Elko, Nevada, 200 miles thereabout, and the Air Mail Station at Reno, over 400 miles from Salt Lake, could hear the messages being sent.

Early in July the sets again went into central Idaho's wilderness on horse packs, and a letter from "R.B." dated July 20 tells the rest like this:

"Wireless telephone communication was established between Moore Ranger Station and Warren, Idaho, an air line distance of about thirty-five miles. The instruments are working very satisfactorily in every respect, and I personally talked with Mr. Raphael at Warren from the Nezperce Station last Saturday morning, and he was able to hear me very distinctly in spite of his affliction (partial deafness). Shortly after the instrument was installed a report came from the lookout from Buffalo Hump of a fire over on the Idaho on the south fork of the Salmon. This communication was given to the District Ranger at Warren in just four minutes from the time the report was received. Prior to this time, telegraphic communication would have taken the best part of a day or probably two days to have obtained the same results.

"After conferring with the Supervisor on the Nezperce, it seemed better for all concerned, due to timber conditions and transportation facilities, to install at Moore Station instead of Buffalo Hump. Buffalo Hump is about twelve or thirteen miles from Moore Station, but is connected by a direct telephone line.

"I was informed yesterday that a fire had been reported by one of the Idaho lookouts on the Nezperce Forest by the radio and immediate action was taken by the Nezperce to investigate it. Quite a large number of messages have already been sent across by wireless between Yule and the Geological Survey man on the Idaho.

"I am more than pleased with the way the equipment is working now, and since we inaugurated the service last Friday morning at eight o'clock, not a single period has been missed and I do not anticipate any difficulty whatsoever during the entire field season.

"The boys on the Nezperce Forest are highly elated over the successful operation of this equipment and I believe the inauguration of this service is going to more than pay in our protection problems, for the effort that has been put forth to complete this study."

The Service and R. B. Adams are certainly to be congratulated on this accomplishment. Personally, we figure that if "R.B.'s" chest breaks through his vest and his first message over the wireless was "I told 'em so," his feelings and their expression are entirely justified.

Right There's Where I Made My Big Mistake

I was planning to go down the creek and count Hank Slick's cattle last Monday, but I got up a bit late and had that expense account to get off by the end of the month. So I called him up and told him I'd be down later in the week, but he said he was going to turn out Tuesday and would tally them for me as they went through the gate onto the Forest. He 'phoned me later and said he only had 75 head, not counting calves, so I put it down in my report that way and sent it to the Supervisor--but right there's where I made my big mistake.

Similarity in Indian Names

By Will C. Barnes

The archaeological inquiry from District 3 in the July 11 Bulletin as to the similarity of the name Tacoma, Tah-ko-bed, or Tahoma, used by the Indians of the Northwest to designate any great snow-covered peak, to the word Tsikoma used by the Santa Clara Indians of New Mexico as a name for a peak in the Jemez Division of the Santa Fe Forest is noted with interest.

The inquirer fails to state the meaning of the Santa Clara word, which really is an essential part of the matter, for a mere similarity of name indicates very little unless its meaning is more or less the same.

Similarity in Indian Names (Cont.)

Just as a starter, however, it should be remembered that many of the Indian tribes of New Mexico and Arizona belong to the great Athabascan family; the Apaches, Navajos, and several of the Pueblo tribes being of that stock. This Athabascan family has been traced back to the vicinity of the Great Slave Lake on the northwest coast of this continent, from which it has migrated south along the Pacific Coast clear down to the Mexican border and as far east as western Texas. Several branches are found in Washington and Oregon, but it is difficult to say that any of them are the Indians in the immediate vicinity of Rainier.

The Santa Claras, however, are said to be of Tewan or Tanoan stock, although some writers claim they are of Athabascan origin. Be this as it may, it would be nothing singular if they should have picked up and grafted onto their own language certain "loan words" belonging to their neighbors the Apaches, Navajos, and also other Pueblo tribes whose origin is undoubtedly Athabascan. They have been living very close together for centuries, and there has been more or less linguistic mixing between all these southwestern tribes.

Many years ago at Fort Apache, Arizona, in the heart of the Apache Indian Reservation, there was a keen, old Chinaman who ran the officers' mess for the Post. He was unusually well educated for his class, and, as the Indians were continually hanging about his place looking for "hand-outs," he picked up a great many Apache Indian words and phrases. I was at work at the time on an amateur dictionary of Apache words, and he told me the Apaches used many words which had almost the same pronunciation and meant the very same thing in Chinese as in Apache. The Post surgeon was also interested in this matter, and eventually we worked up a list of some forty or fifty words common to Apache and Chinese and with the same meaning in both languages. This Chinaman had many of the characteristic points of the Tartar race, and claimed to have been born and raised in northeastern Manchuria, a region in which the natives show strong Tartar characteristics. It is a well-established ethnographic fact that in past ages there has been a very considerable amount of migration by the far northwestern people of this continent and the people of northeastern Manchuria and Siberia back and forth across the Behring Sea and Straits, and the Athabascan family undoubtedly was tremendously affected by this intermingling of races. The appearance in the Apache language of certain words common to both Apache and Chinese is seemingly a rather definite indicator of this long-ago racial and linguistic mix-up.

If the word Tsikoma used by the Santa Clara Indians means a great snow-covered peak, as it does with the northwestern Indians, I should say it proved a close lingual relationship between the Santa Claras and the Northwest Indians through this Athabascan migration. If it doesn't, then it is probably one of those accidental similarities which are found in almost every language.

A Forest Fable

By I. F. Eldredge, D-7

A Certain Master of many Forests, growing Old and needing more time for Golf, bethought himself to Decentralize and forthwith called to him Two Trusted Servants and Spake unto them thusly: "I give to Each of thee One of my Forests to Administer according to thy Lights. In Due time I shall return and seek an Accounting. Voila! The Buck is in thy Hands."

Many seasons passed when came a Time of Much Rain and there was no Golf, and the Master called his Two Trusted Servants to him for an Accounting. The Captain of the Master's Purse and Storeroom stood by and heralded the Trusted Ones into the Presence, saying when the First appeared: "This, Master, is the Best One, for he hath Importuned me for neither Money or Stores." And the First One said, "Yea, Sire, it is so." The Master was Pleased and asked: "And what Report dost thou make of thy Sales of Cedar? What number of Fat Kine graze thy Hills? How many Leagues of Roads hast thou Built? What progress hast thou made in Conquering the Demon Fire?

The First One was Surprised and answered: "Mais oui! Sire, I have none of these things to report. To have done these things I would needs have drawn on thy Chest for Funds."

A Forest Fable (Cont.)

The Master was Full Sore and crieth Aloud to his people there Assembled: "Take this One to the Housgow; I gave the Poor Fish a Buck and he Handeth me back a Lemon!"

The other Trusted Servant then came Before the Master, and the Captain of the Purse and Stores spake and said: "This fellow, Sire, hath a nasty disposition; he hath, since thy going, laid seige to thy Treasure Chest and thy Storehouse; he hath Petitioned, Requisitioned, Blue-slipped and Bull-dozed me and hath sore beset me with wicked pen and honeyed tongue and hath succeeded in Wresting from thy Humble Servant goodly sums of thy Gold and several Reclaimed Flivvers."

The Master saith: "Speak up, Bum! what saith Thou?" And the Other One replieth in a Soft Voice: "Aye, Sire, it is true." The Master, right red in the face belloweth mightily and his People thereabout grew Pale and Trembled for the fate of the Poor Servant. "And what Report dost thou make of thy Trust?" asketh the Master in great anger.

His Servant, all A'tremble, produceth a Mighty Roll of parchment from his Garment and spake, saying: "O, Sire, cast thy eye over this Form 446 and see what I have done with thy Gold and thy Forest; see thou the Cedar I have sold, the Roads I have Built, the Cattle and Swine that range thy Hills, the Rangers that guard thy Lands and collect Tribute for thy coffers. See the lack of Destruction by Fire and the area of Desert that I have Planted to trees and count, O, Sire, the Gold that cometh to thee each Year from thy Forest and Consider that each year, for many years to come, this sum will Multiply even as doth the rabbit."

The Master looketh and it was true, whereupon he crieth to his people about him: "He is a Good Servant and True. I shall Exalt him and set him on High." And he done so and did Appoint him forthwith Captain of his Caddy Bag.

Moral: The man in whose hands the Buck is left has his hands full.

WASHINGTON NOTES

R. V. Reynolds of Research has been appointed Captain of the District of Columbia Civilian Rifle Team for the National Matches to be held by the War Department at Camp Perry, Ohio, in August and September. This team, which numbers among its members L. Neusslein, World Champion at the Olympic Games, and Walter Stokes of the All-American rifle team now touring Europe, has never failed in competition to land in Class A, along with the best teams the Army and Navy can muster. However, as "Bobby" says--"We knock on wood."

Service Photographers: Do not use old style photographic notebooks in sending negative descriptions to Washington--we have no room to file them. Use the new loose leaf Form 166, supply of which is now being printed, and will be available for distribution shortly from Ogden.--W.H.

R. M. Brown, Forest Assistant, has been appointed to fill the place in charge of the Section of Computing, which was recently left vacant by the resignation of W. B. Barrows. Mr. Brown is a graduate of the Cornell Forestry School, where he took the regular forestry course and supplemented it by postgraduate work. He has a big job ahead to raise the level of the work in forest mathematics to a point which has never before been reached in this country.

Lenthall Wyman, formerly a member of the Service at the Fort Valley Forest Experiment Station in District 3, later in the District Office at Missoula, and for the past two years in the State Forester's office in Texas, reported on August 1 to Director Forbes of the Southern Forest Experiment Station at New Orleans for the investigations work in the southern pine region.

July Fire Record: The month of July opened on a favorable fire condition throughout the entire West, but on the closing days the condition was reported "critical" in parts of Idaho and Montana.

The following statement shows the expenditures from the fire fund during the month of July of each year since 1915:

July Fire Record (Cont.)

	1916	1917	1918	1919	1920	1921
D-1	$ 708	$ 60,000	$255,000	$690,000	$ 59,500	$ 92,000
D-2	7,700	1,200	390	9,234	332	2,810
D-3	2,290	..	4,100	70	10,231	4,052
D-4	573	..	5,000	80,000	2,986	4,900*
D-5	3,234	25,000	130,000	9,519	19,000	16,000
D-6	45	35,000	43,000	60,000	10,640	4,072
	$14,550	$121,200	$437,490	$848,823	$102,689	$123,834

*Does not include $4,413 for emergency wire.

District One reported 237 emergency patrolmen on duty July 31.

In the month of June the fire expenditures for the entire Service were $60,409. The cost of fire fighting from the fire fund for the fiscal year 1921 was $989,078, while the average annual expenditure has been $716,000 covering a period of the last 12 years.

FOREST PRODUCTS LABORATORY

New Section of Industrial Investigations: Industrial Investigations, recently added to the Laboratory list of research sections, brings the number of these sections to seven. The creation of the section follows a long felt need for research along certain lines; also the provision of an allotment for this work in this year's appropriation bill largely as a result of the educational work and pressure by the recently formed Association of Wood-Using Industries.

The program of work for this year embraces briefly the following lines;

(1) Survey of the primary and secondary wood-using industries to determine the possibility of more complete utilization of by-products, low grade material, and wood waste produced in the logging and milling of timber and in the manufacture of fabricated wooden articles.

(2) Dimension stock study including the standardization of small dimension stock requirements of all secondary wood-using industries and determination of the most economical methods of converting the standing tree into the form of material required in these industries.

(3) Standardization of nomenclature, sizes, grades, and specifications for lumber and crossties.

(4) Wood waste exchange to effect the utilization of raw material now disposed of as waste by supplying a medium through which producers can locate markets for woods, mill and factory by-products and waste, and wood-consuming plants can locate material of this character such as will meet their requirements.

(5) General work--including the broad field of encouraging the wider use in the wood-using industries of the results of technical research available at the Laboratory.

The proposed personnel of the new section, partly recruited from other laboratory sections and partly from new men taken on from the field and elsewhere, will consist of ten technical foresters, one engineer, and four non-technical employees. The entire personnel will be recruited by September 1.

DISTRICT 2 -- ROCKY MOUNTAIN DISTRICT

Keplinger Injured: Peter Keplinger, while traveling with Supervisor Conner on the Harney Forest received painful injuries which have confined him to his home for a number of days. The horse which Keplinger was riding stumbled and fell, pinning the rider's right foot under him. The result of the accident was not apparent until an X-ray examination showed that two bones of the ankle were broken which required the injured member to be placed in a plaster cast. He insists upon finishing his field schedule which shows that he has lost none of his old-time grit and perseverance.

Fire Conditions: throughout D-2 are favorable at present, though there has not been much precipitation in the Bighorn and Superior National Forests. For the last ten days in July, the field men established a record to the end that out of a total of 20 fires occurring during this period, only one reached the Class C size.

Law Enforcement Again: On July 18, O. H. Barney and Dennis Sheedey, business men from Brush, Colorado, camped inside the Medicine Bow National Forest and left the next morning without extinguishing their camp fire. The Ranger came onto the fire at 10:30 A.M. on July 19 and had extinguished it at 10:45 A.M. Inquiry developed that a party of four, driving a Ford coupe and a Lexington chummy roadster painted green had camped at this place, but the party was gone before the Ranger arrived and no one had noted the licenses.

Ranger Williams immediately set about locating the parties and found them at Brooklyn Lake in the Snowy Range on the 20th. After breaking camp where the fire was left they had driven to Centennial, stored their cars and hired a team to take them to the point where found. A warrant was obtained from U. S. Commissioner John H. Symonds, which was served on July 20, and they have been bound over to appear in the Federal court at the next session. One of the men indicated that he would plead guilty to the charge.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Deer Shooters Taken and Fined on Pioneer Day: Aided by Forest Ranger Morgan Parke and a deputy sheriff of Uinta County, Wyoming, State Fish and Game Commissioner D. H. Madsen of Utah, and State Game Warden Charles Hallstrom of Oakley, brought swift justice upon two Wyoming men Monday, when they were tried before a justice of the peace at Coalville and each fined $200 and sentenced to sixty days in jail for killing a deer. The convicted men are W. H. Rasmussen and George Rasmussen, brothers, living near Lyman, Wyoming, and engaged in the sheep business.

Ranger Parke found part of the carcass of a deer in the camp of George Rasmussen at the head of the Weber River in Hollday Park and telephoned Mr. Madsen, who left Sunday morning for Oakley, where he was joined by Parke and Hallstrom. A Forest Ranger was sent to take Rasmussen into custody and together they went to Lyman, where the services of the Wyoming deputy were obtained. The party then went to the ranch of W. H. Rasmussen, who, after he learned that his brother had confessed to killing the deer, also confessed. The two men were brought to Coalville, where, although a Pioneer Day celebration was in progress, a justice of the peace was pressed into service and the trial was held.

That summary justice was obtained without extradition proceedings, Commissioner Madsen considers rather unusual. The convicted men are said to be well known sheepmen, whose herds range partly in Wyoming and partly in Utah. Forest rangers, Mr. Madsen said, are cooperating successfully with the State game department in checking violation of the game laws.--Salt Lake Tribune.

DISTRICT 5 - CALIFORNIA DISTRICT

Air Patrol: The air patrol program which started out so ambitiously last spring is having a hard road to travel. The local officers of the Air Service have made every effort to furnish a patrol in accordance with the original program, but their hands are tied by circumstances over which they have no control. It was first planned to have regular patrol under way from all four bases early in May. It was found, however, toward the close of the fiscal year, that the Air Service appropriation was so nearly exhausted that no money was available for the purchase of gasoline. It was then planned to start the patrol July 1, with the expectation that deliveries of gasoline would be made as soon as the new appropriation was available. The patrols moved to their bases during the latter part of June in order to be in readiness for the start. When July 1 came there was no gasoline whatever at March Field and only a small supply at the three northern bases. The patrols were started promptly from

DISTRICT 5 (Cont.)

the northern bases, and managed to keep going until about July 22, when they had to be discontinued. Only a sufficient supply of gasoline is on hand to take care of special reconnaissance and emergency patrols, and it will be held for that purpose. The detachments will remain at their bases to render such service as they can, with the hope that a supply of gasoline may be received with which to resume the northern patrols, and also to start the patrols from March Field. The allotment of gasoline is handled in Washington, and so far only very small quantities have been received; furthermore, it appears to be impossible to get any definite information as to what to expect.

Pleased With F. S. Films: The following letter, relative to the F. S. films displayed at Corning, was recently received from the Chamber of Commerce at that point:

"The Corning Chamber of Commerce wishes to thank you for the use of the moving pictures of the Forest Service and its methods, etc. The pictures shown here some time ago were very instructive and highly entertaining. If more of that work were done, the people of the Valley would become more and better acquainted with the work that the Forest Service is doing to protect the people's forests, their grazing grounds and playgrounds, and would lessen whatever opposition there may be to proper maintenance of the U. S. Forest Service."--California N.F.

Unite Against Forest Fires: The Board of Supervisors and the local Forest Service have entered into an agreement by which forest fires will be suppressed by the joint efforts of county and Federal government. From July 1st to October 31st the State Forester will provide a district fire ranger to supervise fire fighting and fire protection, and whose salary and expenses will be paid by the State. Expenses of labor, supplies, fire fighting equipment and transportation to the extent of $1,000--between the dates mentioned--will be paid by the county.--Sonora Banner.

The State Fire Ranger for Tuolumne County will be provided with office space in the Supervisor's office at Sonora.

DISTRICT 6 - NORTH PACIFIC DISTRICT

"The Higher They Are--etc." A few days ago complaints were made to Ranger Durbin relative to a dead cow lying near the water on the bank of Drift Creek. The matter was taken up with District Game Warden Emery of Newport, who immediately came down and investigation showed the dead animal belonged to Major Geo. Wededekind, a retired army officer who operates a dairy on lower Drift Creek. The Warden and Ranger tried to convince the Major that it was unlawful to permit the dead animal to remain where it was, but the Major seemed to think that he ranked too high to be bothered with Game Wardens and Forest Rangers, but they thought otherwise, and insisted on the removal of the carcass. It was decided to give the Major ample time to dispose of the animal, but when it was discovered five days later that the animal was still there, the Warden swore to a complaint and a warrant for arrest was placed in the hands of Constable Ed Starr, with instructions to bring the Major before Justice Atwood, who soon convinced him he was a law violator, and imposed a fine of $50.00 and $7.50 cost, which he promptly paid. The Major was then greatly surprised to know that he was not free, as Justice Atwood requested the disposal of the dead animal within 24 hours. The Major got busy with his spade, and now expects to get the scalps of the Warden and Ranger.--Siuslaw.

Forest Service Scenarios: Some twenty "incidents" were recently sent to the Forester from D-6 in reply to the request for picturesque or unusual happenings to Forest officers, which might possibly be used in a forest ranger movie, all contributed by field officers.

E. H. Weidman, Forest Examiner in investigative work, will be transferred shortly to D-1, and take charge of the Priest River Experiment Station, Idaho.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. V, No. 29. Washington, D. C. August 22, 1921.

FOREST FIRES

By Paul D. Kelleter, Washington

Summary of fire reports for the ten-day period ending August 10.

District 1

Three hundred and twenty emergency patrolmen are on duty, and 650 temporary laborers fighting fire. Within the last ten days 182 fires started, of which 20 are of incendiary origin and 27 are Class C. At the time of the telegraphic report a total of 35 Class C fires was burning, all but four, however, under control.

The fire situation is bad on the Blackfeet, Coeur d'Alene, Flathead, and Kootenai Forests. The Boulder Creek fire near Rexford, on the Kootenai Forest, covered at the time of report about 2,000 acres, the North Fork Coal Creek fire 600 acres. The other Class C fires averaged from 80 to 200 acres. On the Blackfeet along Pinkham Ridge 30 incendiary fires were set. On the Nezperce a lightning storm on August 13 set 35 fires.

Conditions in western Montana and Idaho are extremely critical on account of the heat, drought, high winds and the large number of lightning storms. Conditions are good on the eastern Montana Forests. Fire expenditures since July 1 total about $150,000.

The fire season did not open early this season. During the latter part of May and most of June rainstorms were sufficiently frequent and widespread to throw a light mantle of moisture over most of the country. Conditions gradually changed during July and by the middle of the month had become critical, particularly in western Montana and parts of Idaho, bringing about the present situation as indicated in the summary of the ten-day report.

District 2

Conditions are hazardous in Wyoming, critical in Michigan, and normal in the remainder of the District. No emergency patrolmen are on duty. Since July 1 expenditures for fire approximate $4,000.

A review of the 1921 fire season prior to July 1 shows that last March indications were for an extremely early fire season. Several small fires had occurred in Colorado and in Michigan. The Supervisors put on some emergency patrolmen. A little later conditions were critical in Minnesota and extra patrolmen were put on duty there. Conditions were aggravated by a dense smoke which covered the country, and during the latter part of May the Supervisor of the Minnesota was kept on the anxious bench.

In Colorado, in the meantime, dangerous conditions developed in the southwestern part of the State, where there was but little precipitation, although there had been a belated heavy snowfall in the rest of the Forest area of the State.

In early June conditions were normal except on the Medicine Bow, and continued fairly even until toward the end of the month, when the hazard again became high on the Superior Forest. The country was, however, drying up rapidly in portions of the District, and gradually there was an increase in the fire hazard. With the close of the month, conditions were generally normal for the District except on the Bighorn and in the Lake States.

District 3

Fire season closed--no more telegraphic reports to be submitted by the District Forester. A grand and glorious feelin'! This report follows one of ten days earlier which announced general rains. Expenditures for July amount to about $4,000.

For the 1921 fire season prior to July there is another story. Early in spring, reports from the Forest officers were to the effect that not for many years had there been so many dry spots. The first excitement occurred towards the end of April by a 5,000-acre fire in the Catalina Mountains on the Coronado, which cost about $9,000 and called for the services of about 250 men.

Later there was a fire on Patagonia Mt. on the Coronado Forest, which had crossed from Mexico. The fire covered about 2,400 acres on the Coronado, required the services of 120 men and cost about $3,000. It is reported that this fire was about 10 miles wide in Mexico.

The Apache wound up the old fiscal year by having a $2,500 fire on which 60 men were employed. It was a real fire with a high wind blowing. Numerous small fires occurred throughout the District with strong indications that they had been caused by smokers. The new fiscal year was ushered in by a $2,000 fire on the Tonto.

District 4

Country very dry; numerous lightning storms; general outlook fair. Expenditures for fire since July 1 approximately $4,000.

The 1921 fire season began favorably and continued satisfactorily until the close of June, when there was an increase in high and hot winds, making the conditions somewhat critical with the opening of the new fiscal year.

District 5

California reports three uncontrolled fires; one covering ten sections along Kings River on the Sequoia Forest, with 120 men on the line; a second of 1,000 acres near Big Pine on the Santa Barbara, and the third in Meyer Canyon on the Angeles, covering 1,000 acres, on which 65 men are working. In addition, there were reported two fires under control on the Santa Barbara. Since July 1 about $30,000 has been spent for fire. Conditions reported as hot, dry and hazardous; many lightning storms and large crowds of tourists in the mountains.

The 1921 season in California started last spring with a number of small fires in the southern Forests; later rain in spots brought a respite, but the month of June was generally hot and dry. During June there was a total of 23 fires. A serious one covering 8,000 acres occurred on the Santa Barbara. The cost totaled $2,300. In early July southern California had hot and dry weather with increasing fire danger. In the Southern Sierras it was hot in lower foothills, cool in upper country, with lightning storms on the Sequoia. In the Northern Sierras the weather showed indications of getting warmer, with a lightning storm accompanied by rain and snow. In northern California conditions were extremely favorable.

District 6

Everything very hot and dry throughout. Fire danger great. Expenditures since July 1 about $12,000.

The 1921 fire season opened on the Siuslaw early in May with a twenty-acre fire, but even at that the situation continued favorable through May and June. With the coming of July a change was evident. The weather became warm and the country dry, and by the end of July the report was "Hot and Dry--lightning storms," leading up to the conditions stated in the ten-day report quoted above.

District 7

All's well. For the present this District will not figure in the fire reports. No expenditures since July 1. Fire season comes later in the year.

District 8

No fire danger comparable to conditions in the States, and so nothing to report.

Photographs Wanted

By Will C. Barnes, Washington

The other day a man dropped in to the Washington office looking for photographs to illustrate a story he proposed to write and for which he wanted a picture of a poor, half-starved, drouth-stricken range cow, and also a pot-bellied "dogie." To our surprise we were unable to furnish him either of these photographs.

Apparently Forest officers feel they are justified in taking pictures of only animals which are in the very pink of condition and make a good advertisement for the Forest. We do, however, want photographs showing every phase of the livestock business on the Forests, and for purposes of comparison a poor, half-starved, drouth-stricken cow is just as interesting as one fat enough to be sold to the butcher.

Forest officers should, therefore, keep their eyes open for pictures of "dogie" calves, poor cows, and especially would we like to have pictures of bogged cattle. An old cow stuck in a bog-hole would make a splendid subject for a range improvement article. We have one or two good pictures of this kind now, but, unfortunately, none of them show the old girl after being pulled out of the bog and struggling to her feet. A series of pictures showing Forest officers discovering the cow in a bog-hole; pulling her out; "tailing" her up; and the old Nellie, covered with mud and the very picture of hard luck, wandering off onto the range in search of food, would be very acceptable additions.

Another picture which we would like to have is that of a freshly-dipped sheep, just as she gets out of the dipping vat. I am sure there are plenty of our Rangers who can get such pictures and who would have gotten them long ago had they supposed we wanted anything of the kind.

In taking pictures do not forget there are always two sides to the case, and that for purposes of comparison pictures of poor cattle are just as valuable as pictures of good cattle, exactly as is a photograph of a piece of virgin timber made the more valuable by one showing a burned-over area.

(There are "dogies" and "Nellies" or their counterpart in every Forest activity, but one needs to keep his eyes open to see them. The number of good, usable pictures that are coming in now-a-days is pitifully small.--Ed.)

Where the Pinch Comes

By C. G. Bates, Fremont Experiment Station

We are all more or less interested in the success or failure of natural reproduction. What becomes of the hundreds of thousands of seeds scattered annually by an acre of well-stocked forest? What happens to the thousands of seedlings which appear after a few days of damp weather? And why are the successful seedlings of each species so closely restricted as to site? Why are the forest types so distinct?

At the Fremont Experiment Station we have been groping for the answers to these questions for several years. Thousands of observations on temperature, moisture, and other conditions have been made in the attempt to find the really critical conditions which spell death to the great majority of the natural seedlings. We thought we had begun to see the light of day when the average soil temperatures for a number of years were compiled, and the sharp contrast between the forest types was brought out. Studies of the various seedlings themselves had suggested that the "tolerant" species might be easily injured by over-heating; that the light-demanding species (like yellow pine) could probably stand much higher temperatures. But our soil temperatures were measured at a depth of 1 foot. It was evident that these temperatures could not affect young seedlings directly,--they could only be indicators of the extreme conditions at the surface of the soil.

To obtain direct evidence on the critical conditions at the surface of the soil, we have, therefore, laid out a series of 14 stations in a straight line, which gives a complete cross-section of a narrow east-west valley. On the south exposure there is a yellow pine stand of open character. At the bottom of the valley, and running up the north slope about 100 feet, there is a dense thicket of spruce; above this Douglas fir becomes predominant, the stand becoming more open as the top of the slope is approached. To picture the cross-section, you have only to draw a wide V with flaring tips, the steepest sections (45%) being at about the middle of either side. It is not necessary to give the data for all of the 14 stations,--the top, middle and bottom for each side give the extremes. In noting the contrast between the bottom of the north and south slopes, it should be remembered that these points are only 50 feet apart, but the foot of the south slope is practically unshaded.

Since we were not provided with high-temperature recording thermometers for all of the stations, it is necessary to estimate the surface temperatures for some, from their 1-foot means. These estimated values are indicated by asterisks. The data are for a short period near the end of July.

	North Slope			South Slope		
	Top	Middle	Bottom	Bottom	Middle	Top
Station No.	34	29	27	26	24	21
Mean soil temp. 1-foot	57.8	52.9	50.4	57.4	61.7	59.3
Mean Maximum, surface	127*	96.1	73.9	125*	138.1	132*
Evap., 21 days	101	64	33	114	157	161

The absolutely important feature of these figures is that at the middle of the south slope (Station 24) the maximum temperatures at the surface of the soil averaged, for the last 8 days of July 138°, the highest in this period being 149°F. Such temperatures alone might be fatal to any young seedling, that is, to a plant whose growing tissues are directly subjected to it. These temperatures occurred in spite of the normal amount of rain during the period, and an unusually wet season as a whole. Who can estimate what point the temperatures might reach in really dry weather? The possibilities of drying in this situation are readily seen from the fact that the evaporation rate was more than 4 times as great as at the foot of the north slope.

If one can merely carry in his mind the relative temperatures and evaporation values given above, representing the height of the summer season, it is believed he will possess a very valuable aid in recognizing the conditions which are critical in the establishment of the forest everywhere. It should be remembered that all of these values are modified by shading during some part of the day,--much more, of course, on the north than on the south exposure.

With these data, the significance of my recent note on roots can be better appreciated.

Right There's Where I Made My Big Mistake

The Supervisor telephoned me the other day, told me about what I would probably get for improvements, and asked me to submit an estimate. Protection is mighty important on this district, so I put lookout and trail work first, then some spring development, a drive-way to open up a new piece of range, and such like things. Finally, I got to where I only had a small amount left to figure on. I thought first I'd recommend papering the Ranger Station, but changed over to a new corral for the horses, because they are so hard to catch in the mornings. Just then my wife came in and I showed the estimates to her--but right there's where I made my big mistake.

The Camel as a Timber Carrier

For quite obvious reasons it is impossible that the camel will ever play any great part in the timber-carrying industry, but here and there occasion arises when that useful Asiatic animal comes in really handy. Sandalwood-getting in western Australia is a case in point. As time passes, this valuable wood is being cut out on all areas within easy access of railways, and a good deal of the supplies now obtained comes from regions remote from civilization, and in which the camel may do, and is doing, useful work. Seventy to a hundred miles east of Kalgoorlie, on the Trans-Australian Railway, the passengers may see piles of sandalwood stacked at certain sidings. That wood comes from distances varying from 30 to 60 miles, or perhaps more, from the line. Transport in these circumstances becomes a somewhat serious matter, and here the camel finds a job. Some of the wood is brought in on the camel's back, the average load per animal being something like 5 cwt. Camel wagons are also in use where the physical conditions of the country permit.***When the northwest of western Australia is opened up more freely than at present, and a timber survey has been made by way of ascertaining the quantity and nature of its forest resources, it would seem likely that camels may there, too, find employment in bringing in such valuable woods as ebony and coolibah, as well as packages of tanbarks from the ridge gum and other trees.--The Australian Forestry Journal.

Natural Forest Types in the Balance

By W. D. Sterrett, Washington

In the Service Bulletin for July 25, Mr. Zon comes to the conclusion that the big forestry problem in England, Canada, and the United States is to increase the production of coniferous softwood timber, for which purpose there are millions of acres of idle land which could be used. The world supply of hardwoods is to be taken care of by the Tropics. This brings up the old question of the relative merits of the artificial coniferous forests of Germany versus the more natural hardwoods forests of France. The much larger areas of insect and disease infested timber in the former as compared with the latter speak strongly in favor of allowing nature as free a hand as possible. The Germans now recognize this very keenly. The climax types established by nature for different localities and sites should be an important guide regardless of the economic consideration of possibly greater relative importance of producing coniferous than deciduous timber. Wholesale conforming of the complexion of forest stands to predetermined economic requirements as opposed to taking what nature gives, merely assisting her wherever possible, might prove disappointing in the long run from the standpoint of health and vigor of future forests. Furthermore, present requirements are not altogether a reliable guide to requirements as far ahead as it takes a crop of trees to mature.

Ranger Bill Says:

The Fire Inspector was out watchin' us fight the Big Hole fire last week.

There's lots of folks that wouldn't think so much of the scenery if they had to shovel some of it out'er the trails.

I reckon the feller who made up the sample expense account in the new Dept. Travel Regulations, showin' three squares and a bed in Chicago for $4.75, aint been away from home these past few years.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

The Monarch Pass Road over the top of the Continental Divide between Salida and Gunnison, Colorado, is practically complete. This is a major project and has been constructed by station contract and day labor under the direction of the Bureau of Public Roads. The Monarch Pass is one of the finest mountain roads that has been constructed in the State of Colorado. There is an average of approximately 75 cars a day going over that road at present and all the people are unanimous in stating that it is one of the best mountain roads they ever traveled.

This road was built at a cost of $197,000 and is approximately 27 miles long. It forms an important link in the Rainbow Route, connecting the eastern and western slopes of Colorado, and is also an important link in the major circle trip starting from Pueblo and going to Montrose, Ouray, Silverton, Durango, Mesa Verde, Pagosa Springs, Wolf Creek Pass, Alamosa, Walsenburg and Pueblo.

Lumberman Edward H. Peck, on the Arapaho, has been transferred to the Washakie to take charge of the Wyoming Tie & Timber Company sale which is still the largest single operation in the District.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Boy Scouts Enjoy Talk on Forest Protection: Several hundred Boy Scouts of Salt Lake made a camp in Mill Creek Canyon for three days on July 2, 3, and 4. Forest Supervisor Mann gave a talk to them at a bonfire held Saturday evening, using "Forest Protection" as a theme and emphasizing protection from fires and protection of young green trees from the hatchet. In areas frequented by many campers there is a very serious danger to forests from chopping green trees for tent poles, boughs for beds, and for just the love of cutting something. Where thousands of campers are entering the forests every day, there is need of education along this line, because if only a few of each thousand chop green trees each day, the injury is nearly equal to that of a forest fire.--Wasatch News Letter.

Professor Behre, of the Forest School of the University of Idaho at Moscow, was an office caller yesterday. He is studying forestry conditions throughout Idaho, both within and outside the National Forests with the idea of determining what minimum silvicultural and protection requirements should be maintained in order to keep Forest lands continually producing. He will proceed directly to Logan, visiting points on the Cache, thence northward through the Caribou to the Targhee, visiting cut-over areas in the Douglas fir, spruce and lodgepole pine types. Later he will go on to the Salmon, Challis and Sawtooth by way of Stanley Basin to Hailey, and back to Boise and the north part of the State. A conference by all men interested in minimum silvicultural and protection requirements for the northwest is planned sometime this fall, probably at Portland. Conditions will be discussed and standards recommended.

Mr. Scott returned last evening from Logan, where he attended the first annual Farmers and Housekeepers encampment, held on the campus of the Utah Agricultural College. He reports that the encampment was a complete success from every standpoint, over 1,000 farmers and their wives from various sections of the State being in attendance. The Extension Division of the Utah Agricultural College had arranged an especially instructive and entertaining program with numerous practical demonstrations and exhibits. It is believed that this summer encampment of the farmers of the State is a project with wonderful educational possibilities, and next year we hope to participate in the encampment more actively, at least to the extent of installing and demonstrating an effective Forest Service exhibit.

DISTRICT 5 - CALIFORNIA DISTRICT

Trees for Highway Planting: When in Sacramento recently Mr. Woodbury had an opportunity to visit the State Nursery, two miles east of Davis, with Deputy State Forester Pratt and Solon Williams of the State Board of Forestry.

DISTRICT 5 (Cont.)

The State Board of Forestry has acquired thirty acres of excellent land at this point, has erected a small barn, a 40'x60' lath house, and is intending to build a modern 7-room bungalow to cost about $4,500; also an implement shed. They are now growing eucalyptus, cypress, pistache, elm, sycamore, and basswood seedlings in the lath house, and in the transplant beds outside they have about 20 thousand black locust, sycamore, elm, pistache, Lombardy poplar and black walnut trees. The nursery was constructed to raise trees for highway planting and the first stock planting will probably be done in the spring of 1923. This is thought to be the first State Nursery established for highway planting. Later on, conifers may be grown to some extent for mountain planting. The State Forester has $15,000 available for the maintenance of the Nursery for the biennial period and $20,000 for construction work. The land was purchased by the Highway Commission and the State Engineering Department has charge of the construction work.

Air Patrol "Doins" at Corning: An electrical storm passed over the northern end of the State on the seventh and eighth, and both the Klamath and Lassen Forests asked for special patrols to help locate lightning fires. Due to the gas shortage at Corning the patrol over the California Forest had to be stopped, and a plane was sent to Montague. Supervisor Huestis went on a special trip to look over a bad fire and while doing so two other fires were found. The plane returned to Montague and took on a full tank of gas and came down through the Klamath Forest, then across over the Shasta Forest and then over the Lassen Forest around Lassen Peak and by Lake Almanor. A total of twenty-two lightning fires was picked up and sent by wireless to the Forests concerned. Some of the local people seem to think it is a good thing that the War Department has been held up in furnishing gas for the Forest Air Patrol--however, the Forests in this part of the State do not feel that way. It is just such emergencies as this that causes one to realize the value of the Air Patrol. The Forest Service is arranging to purchase gas from some of their own funds to keep the work going.--Clover.

DISTRICT 6 - NORTH PACIFIC DISTRICT

New Columbia Camp Grounds: Forest Supervisor Brundage reports that the new and important camp ground and group of summer home sites that is being developed on the Columbia at Government Mineral Springs is proving very popular. The area surrounding the Springs and a portion of the Trapper Creek Basin has been definitely set aside for recreational use. This tract of big virgin timber, excluded from adjacent logging operation, is located about 75 miles from Portland in the heart of the Columbia Forest. From Portland it is reached via the Columbia River Highway to Cascade Locks and 22 miles of good dirt or gravel roads, with a maximum grade of 5 per cent.

Echo from the First Aid Course: Injured in a runaway accident on the Clear Fork road, Robert Hill of Portland was brought to Zigzag Ranger Station on the Oregon, where forest officers Henson and Jackson gave first aid treatment, taping and bandaging his broken ribs so as to make the 45-mile trip to Portland as comfortable as possible. The following quotation is from a letter of appreciation written by his mother to Mrs. Henson:

"The specialist we called in to make sure the injury wasn't more serious than seemed on the surface, remarked about the excellent first-aid bandaging of the Rangers, and what pain it saved Robert on the long ride in."

Returns to Service: Chester A. Lee, a graduate of the Yale Forest School, formerly of D-3 and later Lieut. in 10th Engs., for a short time a draftsman in Engineering in D-6, has accepted an appointment as grazing assistant in D-2.

Haven't You Been Poisoned? Quoting from a letter of a sheepman, we are giving the following antidote: "A foreman tried the experiment of pouring whiskey down the throats of two ewes that were down, frothing at the mouth, and apparently dying. He says in 10 or 15 minutes they got up and started to eat grass and joined the band. Since then the foreman claims he has never lost any sheep from poisoning and this experiment took place several years ago. They use alcohol now diluted with water ($\frac{1}{2}$ and $\frac{1}{2}$). A whiskey glass is plenty for one sheep. Their doctor puts something in it so that the herders will not want to drink it, he doesn't know what this is. The sheep should be marked after treatment, as otherwise one might give them a second dose, and they get so drunk that they can't go on for a long time."--L. B. Pagter.

DISTRICT 7 - EASTERN DISTRICT

Forest Examiner M. A. Matoon left Asheville on August 4 to take charge of the crew now organized to appraise about 35,000 acres of timberland in Burke County, N. C. This land is within the Boone Unit and lies on both sides of Linville River. There will be 8 additional men in the party, among whom are Forest Assistant P. M. Hodgkins, F. T. Murphy, and D. K. Hendee. This party will be in the field for three months probably.

The New Forest Experiment Station has moved into new offices in the Citizen Office Building on Haywood Street, Asheville, after having been temporarily housed in the office of the Forest Supervisor.

Not including F. F. R. C. funds expended on roads, the disbursements for Pisgah Forest were $6,000 less than the gross receipts for the fiscal year 1921. If we deduct the 25 per cent fund which is returned to the State in lieu of taxes, we are still a practically self-supporting forest in spite of dull times. The bulk of the gross receipts comes from one timber sale made in 1919.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. V, No. 30. Washington, D. C. August 29, 1921.

FOREST FIRES

By Paul D. Kelleter, Washington

Summary of conditions for the ten-day period ending August 20.

District 1

The situation was somewhat relieved by light showers on August 16, which were general over the western portion of the District. This relief only temporary because of the hot weather immediately following. At present 240 patrolmen on duty and 114 fire fighters on the line. Expenses to date $230,000. Within the current ten-day period there were 277 fires, of which 36 were of incendiary origin and 21 Class C. All under control except one of 300 acres on Salmon Mountain on the Nezperce Forest.

District 2

No emergency patrolmen on duty. Conditions are critical in Michigan, dangerous in northern Wyoming and normal in the rest of the District. Expenditures to date $4,137.

District 3

Fire season closed. Expenditures to date $4,147.

District 4

The situation on the Idaho Forest was greatly relieved by a heavy rain. The general outlook for the District is good. At present six emergency patrolmen on duty. Expenditures since July one approximate $6,000.

District 5

Situation throughout District slightly better, but still critical and danger by no means over. At time of report 7 fires on the Santa Barbara, all well in hand. The big fires previously reported on the Sequoia, Santa Barbara, and Angeles all taken care of. Revised estimate of expenditures places figures at $26,000.

District 6

Very hot and dry in eastern Washington and southern Oregon, with light rains on some of the Forests. Five emergency patrolmen on duty. Expenditures since July one about $22,000.

Districts 7 and 8

No fires.

Supervisor Johnson Returns from Inspection Trip

How often does that or a similar entry varying only in name and title appear in the local Forest newspaper or papers in the District headquarter cities? Not so often in the big city papers, perhaps, but quite often in the smaller papers. And after getting these items in, do we swing back in the office chair and complacently view the result and muse on the big publicity stunt we've put over? Easy brother--don't do it.

First of all--how does the average reader in town view that entry---the barber, the butcher, the grocer and the other chaps? Doubtless the uniform musing of these men who know the officer concerned is about so: "Darn old Bill Johnson. Been out on another vacation trip, I see. Here I'm grubbing in this hot burg at the same old stand day after day and helping to pay the cost of his little trips up to the mountains. Inspection! Huh! this seems to be the big word with those Government guys. Wish I could close up and take a week's inspection fishing trip, too."

Now, on that trip Bill very likely hit the ball hard every day from the time he caught up his horse in the dew-soaked early morn until the minute he began to blow up his wind bed late that evening. He saw much, accomplished a lot, passed up many an enticing trout stream and generally left his Forest in better shape for having been out. Inspection is not the word for his experiences, especially from a newspaper viewpoint.

As far as news is concerned, only the fact that Bill returned is news, if all that he can say about his trip is "Inspection."

As a matter of fact, Bill was wading in news up to his ears every day, if he would but see it, and seeing it remember, and remembering hand it to the reporter or the editor when next he saw him. What news? Every kind--nature stories, camping stories, personal items, chance yarns by the Rangers of daily adventure that can be worked into stories, fishing dope, road conditions, a fire story perhaps, mining gossip or like news.

We're trying to reach a standard here so that unless we can tell something interesting accomplished or seen or heard on a field trip after a man's return, we refrain from mentioning to the reporter even the fact that he came in. Usually, too, when a man goes out, the object of his trip or any special feature of it is told in connection with the news of his going.--E.P.A.,D-3.

A Fireproof Forest

By E. F. McCarthy, Appalachian Forest Experiment Station

The humidity of the Southern Appalachian Mountains in the summer months has never shown to better advantage than this year, when a protracted season of hot, dry weather has prevailed throughout the East. This contrast was brought out strikingly in initial trips by members of the Appalachian Forest Experiment Station in the spruce-fir zone at the crests of the Smoky and Black Mountains. It has been possible, for example, to continue the brush burning along the boundary of the State park on the slopes of Mt. Mitchell with little interruption during the summer. Though the work on this fire line is contiguous to a large area of slash, the risk is reduced to a minimum by the saturated condition of the slash and the humidity which deadens fire during the night. There have been no fires at all in the slash adjacent to the areas to be protected, and some trouble has, in fact, been encountered in starting fire in the brush piled in the fire line.

The same favorable climate which has attracted thousands of tourists to the region has also proved right for the germination of Fraser fir seed on the summit of Mount Mitchell. A count of seedlings which was made under the virgin stand showed an average of 16.1 seedlings to the square foot, or about 700,000 to the acre. They were distributed consistently over the top of the mountain, under standing timber, and show a tendency to germinate on all types of forest floor. Such an unusual "catch" is the result of a heavy seed crop last year, followed by the present heavy precipitation.

These are good omens for the new Forest Experiment Station, whose task it will be to determine, as nearly as possible, what conditions were responsible for the prolific germination, and to follow the young stand through the critical period of establishment. Unfortunately, the exact weather data essential to a complete understanding of this successful seeding and its subsequent history are not now available. Studies of the factors responsible for the success or failure of natural reproduction will doubtless constitute a considerable part of the future work of the Station, in connection with which the coincidence of favorable climatic conditions and heavy seed crops afford opportunities of which full advantage must be taken.

Goat Grazing as a Fire Preventive

By R. H. Charlton, D-5

"Brush was so dense the men spent hours crawling through it." Again, "Hours were spent cutting lines where the brush was so dense the branches interlocked." Many of us have seen such entries in reports on fires.

Rachford theorized that goat grazing would remedy these conditions, particularly on old burns. Accordingly, the experiment was tried out on the Ojai District of the Santa Barbara. About 2,400 head of sheep were turned onto the allotment and allowed to remain there for about a month in the spring The sheep consumed the grass, but the browse remained practically untouched. Goats were then turned onto the area for the balance of the season. They have kept it well opened up without killing the brush or causing erosion. The root systems are intact, and, because of the multitude of individual plants, none of them are browsed to the extent of injury. Part of the range lies in a watershed, but as only a small amount of the water is used for domestic purposes, no complaints have been made of stream pollution.

The largest goat permittee, who operates a cheese factory at considerable profit, says he is well satisfied with the range, but that it is necessary to teach the kids to eat the brush by feeding them a little cut brush each day before they are turned out.

The experiment has established the following facts:

1 - Scientifically managed, goat grazing is very beneficial to fire protection on dense brush areas. The brush is thinned out to the extent of making it navigable, and this without causing erosion or damage to the root system. Narrow trails made by the goats would, with a minimum of labor, check a ground fire.

2 - The grass growth has increased, and 30 head of cattle are now grazed simultaneously on the same range which was previously not grazed at all. Bunch grass growing along the trails traversed twice each day by the goats was untouched and allowed to seed.

3 - The general opinion that goats will not voluntarily go into dense brush has been disproved, at least on this area, where they have done this without any urging.

4 - It is not so difficult as generally believed to keep goats from straying in dense brush, as when they are filled up they seek open spots.

5 - Dry years cause no hardship (providing there is a watering place) because feed is always abundant.

6 - Capacity of brush area is one acre per head per year.

7 - Goats thrive on a three or four-mile drive to feeding ground; in fact, are more easily handled after a drive.

8 - The few head of sheep grazed with the goats were all foot sore, whereas the goats were not troubled even on the steepest part of the range.

9 - The annual loss amounts to 5 per cent, whereas 10 per cent is considered normal elsewhere.

10 - The loss through predatory animals has been reduced to a minimum by occasionally turning hounds loose on the range and permitting them to run at large for a couple of weeks.

11 - Cost of running goats, including grazing fee, is $1 per head per year.

12 - Grazing on burnt areas should not be deferred more than eight years after a fire, because after that the brush is too high above ground to accomplish satisfactory results.

13 - Manure conserved in bedding corrals is sold at the rate of $1 per head per year.

14 - The lustre on the mohair which appears but once a year on goats raised in Arizona and New Mexico is present at all times here, probably due to climatic conditions.--(A true Californian--Ed.)

15 - The wool is exceptionally clean because none of the chaparral species have burrs.

Goat Grazing as a Fire Preventive (Cont.)

It is planned to follow this experiment up on other large burns in southern California. Probably the greatest drawback is the fact that this is not a goat-raising country and stock would probably have to be brought in. Maybe it will be possible to interest some of the goat raisers in the southwestern States where it is understood range is scarce.

Right There's Where I Made My Big Mistake

Looks like we might have a real timber sale on this district 'fore long. The cruising is all finished and I've been working the past week on the stumpage appraisal. I figured it back and forth and cross-wise, but the price always came out at $3 per M. The Forest Assistant said that was too much money for spruce and balsam in a rough country with a long haul--shouldn't be over half that at the outside. So I worked her backwards once more, changed a few figures, made her come out at $1.50 and sent her in to be checked--but right there's where I made my big mistake.

Court Decision Establishes Town Liability

By L. S. Murphy, Washington

The town firewarden system is the foundation for the protective organization in most of the older States in the East. At first it was the original and only organization, and, as such, functioned very poorly or not at all. Subsequently, the States have superposed a State district supervisory organization, augmented by lookout and patrol. As thus extended, centralized, and made responsible, the organization functions very well. Now and then, however, difficulty is encountered where certain towns persist in shirking their responsibility. A recent decision by the courts in Maine should serve as an object lesson to towns of this sort and generally strengthens the effectiveness of the whole protective organization.

In the particular case in question, one of the town selectmen, who by virtue of this office is a town firewarden, had knowledge of the existance of a forest fire within the town, but failed to take the necessary action to secure the suppression. As a result, one of the residents of the town suffered considerable damage to his property, brought suit against the town for negligence, and was awarded the verdict. The court in this case declared that "discovery of the existence of such a fire (when generally ravaging property or threatening havoc) by one of the selectmen is equivalent to discovery by all the selectmen within the same jurisdiction.

"The discovery of which the statute speaks is not limited to direct discovery. The discovery there spoken of means when a selectman, as a forest fire warden, shall have found out, either by evidence or by evidential facts leading to actual knowledge on his part, that there is a ravaging or threatening forest fire; when he knows, or, what in law and reason is the same thing, when he ought to know, of the existence of that kind of a fire,--negligence on his part may impose liability upon his town."

The court "further found that that warden was guilty of negligence in not foreseeing to reasonable degree the potentiality of the fire that he left smouldering; in not foreshadowing a probable result of its flashing up; in not reasonably guarding against the danger it could do."

Remember This!

When Abraham Lincoln was a young man he ran for the Legislature of Illinois, and was defeated.

He next entered business, failed, and spent seventeen years of his life paying up the debts of a worthless partner.

Entering politics again, he ran for Congress, but was badly defeated.

He then tried to get an appointment to the U. S. Land Office, but failed.

He became a candidate for the U. S. Senate and was again defeated.

In 1856 he became a candidate for the Vice-Presidency and was again defeated.

In 1858 he was defeated by Douglas.

One failure after another--bad failures--great setbacks. In the face of all this, he eventually became one of the country's greatest men.

When you think of a series of setbacks like this, doesn't it make you feel kind of small to become discouraged, just because you think you are having a hard time in life?--The Right Way.

Yield Forecasts Without Yield Tables

By E. H. Frothingham, Appalachian Experiment Station

The prediction of the growth of wildwoods--irregular in composition, stocking, and age--is one of the essentials and one of the bugbears of management plans. Except for the areas of second-growth--usually small and scattered--for which yield tables, if available, may be used, some other method must be found. Past attempts to formulate such a method have not met with practical success. To meet the situation in the Southern Appalachians a series of forecast tables for individual trees is being prepared. These tables, which are based on the height and diameter growth of large numbers of dominant trees, give for individual trees, by 2-inch diameter classes, the board foot volumes to be expected at the end of 10, 20, 30, 40, or 50 years. A separate table is provided for each of the more abundant species. The tables are tied to a simple site classification of five sites, based on the height attained within a given period by dominant trees.

In practice, the site or sites included in an area will first be determined by observation of the prevailing rates of dominant height growth. Then representative sample plots or strips will be tallied by species, crown class, and 2-inch diameter class. Specific notes on form and conditions will also be taken. The forecast for the dominant stand will then be the total number of dominants of each diameter class times the volume shown in the tables for the forecast period concerned, each species being treated separately. The results from the sample plots will then be applied to all the area falling within the broad site division. For crown classes not dominant the present volume may simply be carried forward without increment, or a slight per cent of increase allowed; growth in these classes is not likely to be great during the short periods provided for.

As a matter of fact, two columns are provided in the forecast tables, one for the average growth of dominant trees, the other for something less than the maximum growth. A possibility is thus afforded for modifications of the volumes to be assigned, depending upon the density of the stand dealt with.

The individual tree forecast tables are supplemented by a set of yield tables for southern upland hardwoods. These are on the same site basis as the individual tree tables, and may be used directly in predicting the yields of even-aged, well-stocked stands, or may be applied to the classification of all forest lands in terms of their potential producing value.

FOREST PRODUCTS LABORATORY

The Romans Used Casein Glue: An interesting picture of a Roman war-galley may be found in the August issue of Veneers. The picture, with the following quotation, appears in an advertisement for Monite glue: "I found the timber to consist of pine and cypress, in excellent preservation, which, besides a coating of black pitch, had a double covering of canvas glued on, and over it a sheet of lead fastened with brass nails." This refers to the huge pleasure boat of the Roman Emperor Trajan, sunk about 100 A. D. in Lake Nemi and recently discovered. "Other Roman boats found to-day also show that the Romans, master shipbuilders of antiquity, frequently used casein waterproof glue. Casein glue also was used by the Romans for furniture, and some of this Roman furniture from Pompeii is practically like new to-day."

Manufacturer Chides Our Cooperative Store: The assistant manager of the Laboratory store wrote to a certain manufacturer not long ago, requesting him to quote prices on a certain product that some of the members of our supply association are interested in. This manufacturer, when he dictated his reply, seemed to be tinged with the melancholy of a "sweetly solemn thought," for he wrote something like this: "Having studied economics a little, the thought comes to me that if government employees organize cooperatively to buy goods at

FOREST PRODUCTS LABORATORY (Cont.)

wholesale prices, how will the merchant make sufficient profit to support the government that pays these employees?" A most depressing thought, from the manufacturer's standpoint, we must admit. We have a feeling that it was on one of his bad days that he made this dizzy excursion into the realm of economics.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

F. W. Perkins, Assistant in Charge of Motion Picture Laboratory of the Department and G. R. Goergens, Chief Cinematographer, spent a few days in District Two this week taking motion pictures. A trip was made to the Mt. Evans and Berthoud Pass road projects and pictures were secured of forest activities on the Arapaho Forest. They left Denver August 17 with Mr. Palen of the Bureau of Public Roads for Salida, from which point they will make a trip over Monarch Pass road, and it is hoped that arrangements can be made to get some pictures of irrigation activities near Grand Junction on their way to District Four.

Another Violator Punished: On August 9 Ranger Hauser, in charge of the Pine District of the San Juan Forest, while attending to official duties on Vallecito Creek, came upon Mr. Charles Parcell of Pagosa Springs, Colorado, who had just killed a deer and was skinning it. Hauser immediately arrested the man, and the next morning brought him to Durango, where he was arraigned before County Judge Bradford and pleaded guilty to the charge. He was fined $100.00 and costs, making a total of $127.60 for this violation of the game law. Violator discovered at 5 p.m. on August 9; case completed at 11 a. m. on August 10.

DISTRICT 3 - SOUTHWESTERN DISTRICT

The Manzano Pick Mattock: The Manzano has been experimenting with a modified pick mattock for trail construction. The mattock blade is drawn out to a width of from 5 to 5½ inches, and so tempered that the edge will not chip off on rocks, or, on the other hand, be excessively battered. After considerable use, the following conclusions have been reached: (1) This mattock will move dirt faster than the ordinary thick, narrow bladed mattock. (2) Even when dull, it is sharper than the latter, and it can be sharpened with a file or grinder. (3) It is vastly superior to the ordinary mattock in grubbing out roots, as it has a much keener cutting edge. Small oaks up to 1½" in diameter can be bent over and grubbed out under the ground with one operation. For tempering, the blade, when at a dull red color, is placed in moist earth instead of water. This prevents chipping of the blade on rocks.

Foreign Competition and Domestic Depression: The wood dealers of Nogales, Arizona, as the Coronado Bulletin of July 15 tells us, are meeting with severe competition and have been compelled to lower their prices about 50 per cent, due to the large number of unemployed laborers in Nogales, Sonora, where the authorities have put a great many of these idle people to work cutting wood which is hauled into Nogales, Arizona, and there sold for four to five dollars per cord, or for three to four dollars per load. A real earnest complaint came from one of the old purchasers, who wants the forest sales price lowered. He puts it up strongly and pathetically in this way: "It taka tree day to make de load, one dolla por de hay por de horse, four dolla por de load. Feeda de six child, all girl, all skin de bone, Mexicana in Senora worka too cheep, prica de wood too much." The Ranger sees no relief but to bring the matter before the tariff revisers of Congress for the inclusion of cord wood in a schedule that will protect our local industries and our workers from unfair competition on the part of foreign cheap labor.

Increment: Mature W.Y.P.: A recent compilation by Forest Examiner Krauch, covering two forty-acre plots established in mature western yellow pine, shows that during the five-year period, 1915-1920, one plot with a stand of 11,800 ft. B.M. increased 2.0 per cent, or 236 ft. B.M. per acre, which is a net annual increment per acre of 47.2 ft. B.M., and the other with a stand of 13,450 ft. B.M. increased 2.46 per cent, or 331 feet per acre, which equals 66.2 feet net annual increment per acre. Mr. Krauch comments that it is evident that increment is still relatively high, being about as good as on the average cut-over areas. The increment per cent is, however, low, being only as much in five years for mature stands as in one year on cut-over lands. In other words, in mature stands we have a high principal (stand per acre) but a low rate of interest (increment %). A "fair" return is, nevertheless, obtained. The longer the period of investment, the lower the rate of interest, in trees and money alike.

Indian Nomenclature: Ranger Plomteaux, writing in the Santa Fe Bulletin, calls to mind an article in the D. O. Bulletin of June 23, copied from the Santa Fe Bulletin, which asked whether the Santa Clara Indians may have ever visited what is now Washington, because of the similarity in name of the Tsicomo Mountain in the Jemez range and various mountain names of the northwest. Mr. Plomteaux, who works among and has intimate acquaintance with the Santa Clara Indians, says there is a possibility of such a visit, of course, but he doubts it seriously. At least, the evidence of such a visit can hardly be based upon a similarity of names because the name given to the northwestern mountains, Tacoma, Tah-ko-bed, or Tahoma, with various spellings and pronunciations, is a generic term which the Indians of the northwest applied to great snow covered peaks, while Tsi-co-mo, as applied to the peak in the Jemez range, means mountain of glass (volcanic glass or obsidian) and does not refer at all to a state of being snowcapped.

Ranger Bill Says:

Smoke Chaser Dugan's horse can't get by the Blue Valley schoolhouse without stoppin' even in summer.

There's so many picnic parties on my District these days that I've quit carryin' lunch.

For. Asst. Newcomer got off the wrong side of Old Joe with a "Life-Saver" in his mouth, but it didn't help much.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Fallon Fire Law Violated: Fred Betts, the Deputy Firewarden for the Southern Idaho Protective Association, was successful recently in getting convictions in two fire trespass cases in New Meadows. Frank Delbar and R. O. Bowen, both of New Meadows, were each fined $10 and costs by Justice of the Peace J. E. Thamert, also of New Meadows, for starting fires in conflict with the Fallon Fire Law. The trespasses occurred outside of the Idaho Forest, but within the Idaho Fallon Fire Law District. This is an example of quick work, only about twenty hours having elapsed from starting of one of the fires until the fine was paid.

Ranger Christensen had a violation of the Fallon Fire Law on his district. A rancher decided to burn a small field of brush on his land, which he considered a perfectly safe proposition. Ranger Christensen and the Supervisor did not agree with him on this point, and after helping him effectively put out the fire which he had started, gave him a very urgent invitation to call at Malad and tell the Justice of the Peace about it. He did this, but the conversation cost him $30.00. The publicity which he secured in the Malad papers on this case will, we believe, have a very desirable effect.--Cache Register.

A Visit to Lehman Cave: Forest Clerk Lillian R. Jones spent a few days last month in looking over the files at the Baker Ranger Station and while there visited Lehman Cave, which is located about six miles from Baker. She reports that the Nevada Forest can claim the distinction of having within its boundaries one of the most remarkable scenic attractions in the United States,--perhaps of its kind, in the world. The winding corridors and the immense chambers contain treasures of wonderful beauty. It is a vast palace of art. It has been estimated that the stalactites are formed at the rate of one inch in a century. The cave was discovered about thirty-five years ago, but has been rather inaccessible on account of bad roads. This has been remedied by the construction of Lehman Creek Road and Lehman Creek Trail, and it is expected that there will be many visitors to the cave in the future.--Nevada Nugget.

DISTRICT 5 - CALIFORNIA DISTRICT

Kent Camp on Lake Tahoe: Hon. William Kent is improving still further the camp site on Lake Tahoe which he generously presented to the Forest Service for the use of the public. This camp site has proved exceedingly popular, and the shower baths and pier for the landing of boats now being built by Mr. Kent will make it still more comfortable and attractive to campers.

District Office Has Noted Visitor: The District Forester recently had a call from Mr. Bailey Willis, 35 years with the Geological Survey, a great personal friend of Gifford Pinchot and F. H. Newell, and one of the foremost advocates of conservation in the United States. Mr. Willis, in the course of his official life, has traveled in many foreign countries and has written much on geological and conservation matters. He is planning an automobile trip through the Eldorado, Tahoe, Plumas and Lassen Forests, and told me that he was particularly anxious to see our public camp grounds and to meet the officers en route. I assured Mr. Willis that we would appreciate any suggestions regarding our work, or any constructive criticism from him.--P.G.R.

Forest Officers Discover Hieroglyphics: While surveying out a special use resort area on the State Lincoln Highway between Auburn and Truckee, Ranger Hussey and Supervisor Bigelow discovered some extensive Indian hieroglyphics on a series of large, flat, granite rocks within 200 feet of the highway. It is situated in Nevada County in the first basin below the summit, about one-fourth mile from the subway under the Southern Pacific Railroad and on the slope towards Donner Lake. The markings are similar to others found in different parts of California and consist of arrows, snakes, papooses, baskets, straight lines, etc. This discovery is especially interesting, as it is about 25 miles east of another known set of markings on the South Yuba River near Cisco Flats, which are also close to the present highway. This route was evidently a pass for the Indians in going from the Nevada country to the valleys of California. This was also the route of the Emigrant Trail and it was some five miles below these markings that the Donner party perished near Donner Lake.--Tahoe.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Can You Beat It? Clippings actually received from newspapers in District 6 represent a total of 3,589 inches of fire prevention news published during Forest Protection Week. What the record would be if complete returns for the District were available can only be conjectured. The banner score was made in the Cashmere Valley Record, with 803.7 inches.

The Bend Bulletin carried 314 inches, the Portland Telegram 154½, the Cle Elum Echo 128¾, the Tacoma Ledger 118¼, the Seattle Post-Intelligencer 117½, the Leavenworth Echo 117, and the Republic News-Miner 112½. No others passed the 100-inch mark. Three Portland papers--the News, Oregonian, and Telegram, the Tacoma News-Tribune, the Settle Times, and the Spokane Spokesman-Review ran special fire cartoons, while special signed articles by Forest officers appeared in various papers.

Figuring that an ordinary newspaper page, if there are no ads, contains 153 inches of solid reading matter, the record becomes:

In 30 Oregon papers, an equivalent of 8.5 solid pages.

In 36 Washington papers, an equivalent of 14.8 solid pages.

This makes a total of 23.3 pages, or the equal of a good-sized newspaper, including all advertisements. The count does not include a considerable amount of Forest Protection Week matter carried by periodicals other than newspapers, such as the West Coast Lumberman, the Timberman, the Oregon Voter, and the Spectator. Obviously no such killing would have taken place if it had not been for the efforts made by the Forest officers, to whom much of the credit is due. Can any other District make a better showing?

Service Bulletin

U.S. FOREST SERVICE
(Contents Confidential)

Vol. V, No. 31. Washington, D. C. September 5, 1921.

SERVICE

"Every time a man or woman in the Government service withholds a requisition for a pencil, a pad of paper, a ball of twine, a pen, or any other piece of equipment which, upon second thought, he will realize he does not need, he has by that act really done as good a work as if he had put the money-value of the article into the Public Treasury.

"There are tens of thousands of employees who appreciate the kindly and wholly splendid attitude of our President, who desires to relieve the backs of all of us Americans of the terrific burdens of taxation, and took occasion at the time of mentioning his plan in regard to the budget, to speak well-merited words in regard to the part we of the Government have had and will have in helping.

"Small economies by each, when multiplied by the thousands, will result in great savings. We were devoted in war; let us be devoted in peace; let us save in small things as well as large; let us call for nothing we do not need."--The Postal Bulletin.

Spraying Trees from an Airplane

The novel experiment of spraying a grove of trees from an airplane, the first ever attempted in the United States, was made on August 4th over the farm of Harry A. Carver, near Troy, Ohio, to prevent further ravages of worms which have twice practically defoliated this grove of 5,000 catalpa trees. The plane, piloted by Lieut. John A. Macready, Air Service, and carrying E. Dormoy, McCook Field, designer, who constructed the sifter used to spray the arsenate of lead powder, flew within 20 or 25 feet of the top of the trees, releasing the powder which was carried by the wind and air currents from the ship's propeller into every part of the grove. Treatment of trees in this manner saves much time and labor, as an airplane in a few minutes can do work which would require a number of men and many pump sprays several days. The effect of this experiment will be watched with interest by entomologists and forestry experts in many parts of the country, especially in the east, where a similar scourge is working havoc with many magnificent elm trees. The idea of utilizing an airplane for this purpose originated with Mr. C. R. Neillie, of Cleveland, who came to Troy to witness the first trial.--Air Service News Letter.

Modest Rangers

In a recent issue of D-5 News Letter, a Ranger commented on the published accounts of the accomplishments of D-2 Rangers "in print." He said, "The majority of the Rangers in D-5 are either too eternally busy or modest to rush into print," and added, "I would rather never get my name between the pages of any kind of a book or periodical than to have to place it there myself," and so forth. D-3 men have been and are still encouraged to make use of the local press wherever and whenever that is possible for the good of the Service. The natural modesty of many good men is commendable, but there is, however, a sharp distinction between "getting into print" for personal aggrandizement in glory and "getting into print" for the purpose of putting into the minds of people information for which they are really hungry, that will build up a general comprehensive knowledge of the work of the Forest Service. Of course, it should be remembered that "a brig with a gale in the topsail needs ballast in the hold." After all, the big thing in Forest Service relations with the public is to forget the ego of the person and develop the personality of the officer. It is surprising how many incidents that are really interesting, readable, and instructive and can be safely given out, come up in the routine life and work of a Forest Officer. If one has a story, why not tell it for the "good of the Service"? If the editor, in order to add color and authority to the yarn, chooses to make personal mention of the author, that is his lookout and does not need to be a basis for chagrin or discomfort on the part of the Forest officer.--D-3, Daily Bulletin.

Original Fire Fighting Fund Exhausted

By Paul D. Kelleter

The original appropriation of $250,000 for fighting and preventing fires has been exhausted and the Secretary has authorized the Forester to use $150,000 of General Expense Funds appropriated for the different National Forests in settlement of fire-fighting liabilities pending the passage of a deficiency bill by Congress.

Authority is vested in the Secretary to meet any unforeseen emergency that may arise by the use of available funds that have been appropriated for other purposes, and the action of the Secretary means that the Forester has been authorized to draw on the credit of the Forest Service to the amount of $150,000 for fire-fighting purposes. To facilitate subsequent bookkeeping, the District Foresters have been given a definite limit for expenditures to be charged against the original FP item of $250,000. Further fire expenditures to the amount of $150,000 will be paid from the item "General Expense National Forests" and carried separately on the books pending the availability of funds through deficiency appropriations to meet the additional fire expenditures.

Right There's Where I made My Big Mistake

Nat Pierce, my Guard, and I were blasting post holes out in the back lot of the Ranger Station last month, so as we could fix up a fence to keep the horses from wandering into the big pasture. We done fine for amateurs and got a lot of holes made before sun-down. Just as I was putting in the last shot I heard my wife calling supper, so we tamped her down rapid and touched off the fuse. Something went wrong and the shot didn't go off, so after waiting a few minutes I went back to see why - but right there's where I made my big mistake.

WASHINGTON NOTES

Civil Employees in Government Service August 1, 1921:

District of Columbia	68,170
In the Field	546,625
Total	614,795

Of this total 12,250 employees are in the Department of Agriculture (4,661 in the District of Columbia and 14,505 in the field.)

Correction: Following corrected statement of receipts received from District 1. The Office of Accounts has issued new figures for National Forest receipts for the Fiscal Year 1921 as follows:

Total net receipts	$2,504,955,22
Decrease, as compared with previous fiscal year	2,288,547.05

The Peters Cartridge Company is our latest ally in the fire prevention game. The cartridge boxes of this manufacturer now contain an insert slip carrying the slogan "Forest Fires Kill Game - and Ruin Hunting," illustrated by a cartoon of wild life fleeing from a fire. In one corner of the slip is a sketch of a man hung from a tree with the label "Proper Treatment for a Hunter Who Starts a Fire."

"Look See": Take a squint at the standard size of the Service Bulletin as now issued, and then at the length of those last articles you sent in - still unpublished. Do you get the idea?--Ed.

Distribution of New Grazing Section of Use Book: In response to a notice that the grazing section of "The Use Book" was ready for distribution, the Washington office has received requests for a large number of copies.

The edition was limited to 5,000, and cost us about 10¢ a copy, and as printing money is mighty scarce, it is not expected that we can get a reprint during the present fiscal year.

There seems to be an impression on the part of many Supervisors that it would be well to give each permittee a copy of this manual, but as we have over 42,000 separate permittees, that is out of the question. In the interests of husbanding the edition and making it go just as far as possible, there should be no general distribution of the manual, but it should be given only to those persons who make specific request for it, or in cases where it is the most satisfactory way to furnish permittees with information as to the regulations regarding grazing.

The Washington office now has but about 700 copies on hand, which will have to last us for the rest of this fiscal year; so please distribute it only where the case seems to justify its use.--Will C. Barnes.

Forest Examiner Gordon T. Backus has been selected for transfer to the Eastern Division, Branch of Forest Management, to handle the inspection of cooperative fire protection work in the Southern Appalachian States. These States include at the present time Maryland, Virginia, West Virginia, North Carolina, and Tennessee, but will later include other States in this general region.

Mr. Backus entered the Service in 1908, and was assigned to the Office of State and Private Cooperation, was transferred to District 3 in 1911 and assigned successively to the Tusayan, Coconino, and, since 1917, to the Santa Fe National Forest, where he has been engaged largely on timber sale and timber reconnaissance work.

His headquarters for the time being will be in Asheville, North Carolina.--L. S. Murphy.

FOREST PRODUCTS LABORATORY

Forestry on Program of "World's Greatest Newspaper": The Chicago Tribune, which modestly admits the above description of its standing among newspapers, gives this as its program for Middle West development, repeated daily at the head of its editorial column.

1. Open the Great Lakes to the Atlantic.
2. Finish the Lakes to the Gulf Waterway without delay.
3. Develop a practical highway system.
4. Regrow our vanished forests.

The emphasis under four is ours. But it is worth so indicating. When a great metropolitan paper adopts forestry as part of its fundamental program for the development of the vast inland empire of the nation--well, they're coming alive. The great northern white pine region may still come back.

Two Western Pilgrims at Laboratory: Two Forest Management men from the western Districts made visits to the Laboratory during the past two weeks, each spending a few days finding out what makes the Laboratory run, and looking into the origin of all the weird sounds and smells about the place. These pilgrimages are of as much benefit to the Laboratory as to the field since the visitor is afterwards in a position to do missionary work for wood-using industries in the west that may have problems upon which the Laboratory is in a position to throw light. The visitors were Assistant District Forester R. E. Marsh, in charge of Forest Management at Albuquerque, N. M., and Lumberman C. E. Knouf, in charge of timber sales at Missoula, Montana.

FOREST PRODUCTS LABORATORY (Cont.)

Thanks Laboratory for Losing Bet: This in a letter from a "client" who sent in a slab of wood to the Laboratory for identification: "Thanks for the identification of the panel I sent you, as white oak. My gratitude is tempered by the fact that I lost a bet on it."

DISTRICT 1 - NORTHERN DISTRICT

Priest River Working Circle: Elers Koch and M. H. Wolf recently returned from the Kaniksu, where they have been planning work for the reconnaissance crew who will soon be engaged on a timber survey of the country west of Priest Lake, known as Priest River Working Circle. The crew will consist of 6 men. They hope to complete the survey of 250 sections before the season closes.

Big Creek Pulp Chance: U. S. Swartz and Frank Klobucher have just completed a preliminary survey of a railroad from the Big Creek Pulpwood Chance on the Blackfeet National Forest to Columbia Falls, Montana. Very little difficulty was encountered in finding a practicable location for the railroad. This survey should greatly stimulate interest in this body of pulp timber by bringing it closer to market.

New Road to be Constructed: Bids for the construction of the Skalkaho Road will be opened September 1. This road crosses portions of the Bitterroot and Missoula National Forests lying between Hamilton and Anaconda, bringing these two cities into much closer communication. The produce of the productive Bitterroot Valley should find a ready market in Anaconda and Butte. The project will be handled by the Bureau of Public Roads.

Ketcham to Frisco: S. H. Ketcham of the District Office has recently been detailed for several months to District 5, where he will assist in an investigation of water power possibilities under supervision of the Federal Water Power Commission.

Department Exhibit: An exhibit, consisting of material from the Forest Service, Bureau of Public Roads, Biological Survey, and Bureau of Animal Industry, will be placed at the Spokane Interstate Fair, the Montana State Fair at Helena, and the Midland Empire Fair at Billings, during September. This is rather an innovation for the Forest Service, for it places us in the public eye as a part of the Department of Agriculture and shows our proper relation to some of the other Bureaus.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Deer Poachers Caught: Feeding tourists deer meat out of season costs money in Colorado. Chas. Parcell of Pagosa Springs, guide for a party of New Yorkers, found this out when he was recently fined $127.50 for killing a fawn. To Ranger Harry D. Hauser of the Durango-San Juan Forest belongs the credit for making the arrest and securing conviction.

Professor John Ise, of the University of Kansas, author of the "National Forestry Policy," is making a tour of eight of the Colorado National Forests this summer in order to get first-hand knowledge of forest conditions to supplement his previous research.

Livestock Conditions: Livestock generally are in very good condition, but the market continues discouraging. Sheepmen have planned to dispose of practically all their lamb crop, since they are the only things in the sheep line that command anything like a marketable price; however, they have dropped within the last two weeks from 10¢ down to 8¢.

A party from Trinidad the other day shipped very choice grass fat steers and received only 5¢ per pound. Fat cows range from 4¢ to 4½¢ and down.

DISTRICT 2 (Cont.)

Wyoming Tie & Timber Company's Drive: The railroad tie drive of the Wyoming Tie and Timber Company, which has been operating on the Washakie Forest in Wyoming for the past nearly eight years, was brought into Riverton on August 4. 260,000 ties were included in the drive; the driving distance being about 135 miles. The ties were driven through a narrow box canon and over a falls 160 feet in height.

This drive was followed by a drive of dead mine prop material of approximately 100,000 pieces of dead prop timber which was secured from areas previously cut over by the Wyoming Tie and Timber Company by a group of Lander men for use in the coal mines at Hudson.

DISTRICT 3 - SOUTHWESTERN DISTRICT

The Gila Episode: On August 15, Ranger J. R. McClure, of the Mimbres district of the Gila, discovered that a boundary fence had been cut without any apparent necessity, as there was a gate just a short distance away. He also found the trail of the man who had probably cut the fence, and after telephoning to Silver City for a warrant, accompanied by Ranger Leslie Fleming, he took up the trail. On the following day the two Rangers were joined by John Head, a cow man of the vicinity. The three overtook the people they were following, who later turned out to be Eudoxio Guzman and Guilfredo Acosta. At the approach of the officers, the two ambushed themselves behind a huge alligator juniper, while the Rangers and Head were forced to come up through open timber with only oak brush for cover. When the Rangers and Head were about thirty-five yards distant from the tree and were calling for the fugitives to throw down their guns and come out, Guzman opened fire at Head and just missed him. Guzman then fired at both of the Rangers with a pistol, according to the testimony at the hearing. After this a number of shots were exchanged until Head shot Guzman in the side with a rifle. Acosta surrendered and was arrested. Guzman died within 15 minutes. At the inquest, which was held at Santa Rita on Wednesday, the verdict was justifiable homicide, as Guzman was found to have been shot and killed while resisting arrest. The preliminary hearing was held before Justice of the Peace McCann at Fierro on Friday. Acosta was bound over to the grand jury on the charge of assault with intent to kill and his bond fixed at $1,000.

"'Persistent,' or 'The Lion We Didn't Catch,'" might be the title of a story that comes from the Heber District. It appears that a mountain lion located the Ranger's small herd of deer homing in the Heber Station pasture and killed a young but good-sized doe. Ranger Kartchner procured two traps which were s in expectation that the animal would return to the kill. The guess was a good one. Mr. Lion came back, walked over the traps, picked up the carcass, dragged it out of the danger zone and proceeded to make a meal. The following night four traps were set, with the same result. The carcass again being dragged, this time some 100 yards or more into a pinon thicket, and another meal taken. That night, in addition to the four traps, a gun was set. Next morning's visit to the spot showed two traps sprung, the gun fired, a splotch of blood from the wounded lion but the carcass gone, this time carried another 100 yards or more across a ravine and most of the carcass eaten. By this time strychnine was procured and the remainder of the carcass well treated. The tracks the following day showed another and final visit and most of the carcass eaten, which manifestly ended the career of the prowler, no further signs of his having been discovered.

The Marks Gates: "Ranger Scott Marks of the Apache has built himself a gate. There is probably nothing wholly new under the sun even in gates, but an awful lot that's been mislaid, and possibly this gate is one of the mislaid improvements that can be used.

"The Marks gate is adjustable as to sag, and economical as to lumber and posts. Instead of hanging on a pole pivoted on a wheel-hub, with double cross slats at the top of the gate posts and a diagonal suspension board from the top of the pivoted pole to the swinging end, the Marks gate is hung on hinges direct to the gate post. The diagonal suspension board is replaced by a wire attached to the top of the swinging end and eyed into an ordinary 2" brake block or pulley about 18" from the top of the hinge post, and a wire loop runs around the top of the hinge post and through the block. When the gate is opene the block runs a little on this loop, thus giving a perfectly horizontal swing and avoiding strain on the hinges. When the gate sags or pulls up with seasonal moisture and temperature changes, tightening or loosening the diagonal suspension wire makes adjustment easy, and avoids trouble in the fit of whatever locking device is used. The double cross slats connecting the tops of the gate posts may be replaced by twisted wire or omitted, thus making the sky the limit on hay room. It looks worth trying out elsewhere."--Apache Bulletin.

"Who Boasteth Least Tells Fewest Lies."--District Forester, Ogden, Utah. Dear Sir: Reference is had to our "Daily News" letters. I wonder if we are not making a mistake by publishing so many different articles in the "Daily News" of what has been accomplished in the field. It seems to me and to many other Forest Officers of this locality, that it is a series of self praise, blowing about what they have accomplished in the field. One man builds a ranger station and several outbuildings at an unreasonably low price. Another one puts up 40 tents and makes 40 bedsteads and 40 tables, etc., making it appear that he did that which evidently must have interfered with his proper field work. Another one rides 845 miles per month for six months. Perhaps he did, but what did he accomplish with all that time expended toward good work? Then comes the "News" with an article from the Manti recording a record having been made in marking trees. Now I wonder if the marking was made in a satisfactory manner, or was it just for the sake of marking as many trees as possible in a given time and then blowing about it. Such items as that are apt to cause some other Ranger to try to beat these records regardless of the standard. I believe we should discontinue such items, since in my opinion they smack too much of blowing each contributor's own horn and this does not tend to raise the standard of our work. --E. Grandjean, Forest Supervisor.

Why Hide Your Light Under a Bushel? Referring to Supervisor Grandjean's letter in the Daily News of August 1, the point he raises fits in very well without past, present and future discussion of plans and standards. There are at least two kinds of standards of work. Standards of quantity and standards of quality. One is just as important as the other, and there should be a balance between the two. The man who builds a ranger station at the lowest cost or in record time, the one who puts up the tents and makes the other articles, the one who marks so many trees per day, or the one who rides so many miles per day, has set up a standard of quantity. The responsibility for the plan followed and the quality standard set is that of Supervisors and Rangers directly involved, and I feel sure they can, if necessary, make their own cases.

The fact that a Ranger rode 845 miles in a month is, of course, not an indication of the quality standard, neither is the fact that he rode but 845 miles in a year in itself necessarily an indication of high quality of work. The first man at least displayed energy, and I would a little sooner expect to find his fire tools in shape or that he would catch a fire when small, or that he would know what happened on the range than the second man. The horn that has something to "toot" about may be pardoned for "tooting." I suspect that the Boise has several good "toots" involving both quantity and quality. Forget your modesty and tell us what you are doing and how you do it. It will not be published if you object.--R.H.R.

DISTRICT 5 - CALIFORNIA DISTRICT

Tuolumne Big Oak: On the Stanislaus Forest is the "Tuolumne Big Oak," which is reputed to be the largest of its kind in the world. Its circumference is 31 feet at the foot, and the branch spread is over 130 feet. It is thrifty and still growing, and is estimated to be from 600 to 700 years old. In 1920, the people of Tuolumne County subscribed $750 for the preservation of the tree, which amount was paid to a tree doctor, who trimmed the dead limbs, treated the cuts to a solution that prevents decay and dug out all holes that ground-rot was entering through and filled them with cement, about 900 pounds of the latter being used. The tree is on private land and the owner has reserved forty acres around it, which gives it a favorable setting. Recently, Ranger Freer and some other Tuolumne folks spent a Sunday cleaning up around the tree to make it more attractive as a place for recreation.

Fire and Notables: Forest fires in southern California are getting close home to famous people. In the early part of July a big brush and grass fire raged on the estate of Ignace Paderewski, famous pianist and former Polish Premier. Paderewski himself took part in fighting the fire, along with two or three hundred others, of whom a considerable number were members of the millionaire colony of Paso Robles.

Near Atascadero, at about the same time, a heavy fire swept over the Eagle Ranch, on which is a famous house built by Baron Von Schroeder, which was a replica of an old European manor. Frederick Peabody, a millionaire manufacturer and present owner of the ranch, hired fire fighters at a dollar an hour. If he could be persuaded to pay our fire fighters, the Forest Service could doubtless get half the State of California onto the fire lines.

Arthur Ruhl and Peter B. Kyne Visit Us: On August 18 we had a call from Arthur Ruhl, Collier's noted writer and war correspondent. He was furnished with a set of our best air patrol pictures, which will probably be used in connection with an article some time soon. Another visitor was Peter B. Kyne, whose writings you all have read. And we have had a number of lesser literary lights call for information recently.

Will Wonders Never Cease! A nicely typed F 2-a has just reached the Law Enforcement office that has caused deep and serious reflection among the cognoscenti. It informs us that a certain fire started May 15, was discovered July 13, and extinguished August 5, and yet covered a space only 3x30 feet. Some fire!

Ranger Bill Says:

Eternal vigilance is the price of a clean fire record.

Did'ya ever notice what a wonderful tan some fellers can get off a $4 per diem?

I bet the fellers at Headquarters hate to read about all these big fires they're missin'.

DISTRICT 6 - NORTHWESTERN DISTRICT

State Grange for Forestry: The Oregon State Grange, at its recent annual session at Eugene, unanimously adopted a resolution setting forth that the United States is cutting timber three or four times as fast as it is reproduced and replanting should start at once. The Grange believes that practically all land upon which timber has been grown is really forest land and should be devoted to that purpose again. After replanting, it maintains:

"'The owner must be given the benefit of a moderate tax,if taxed at all, while his new crop of timber is being grown; it must be protected from fire due to negligence, and he must be required to safeguard the way his timber is cut and his slashings disposed of.'"

Attorney General (Washington) Rules in Slash Disposal: The question whether a logging company would be justified in failing to dispose of its slash as required by the State law when the burning of such slash would destroy timber or logs left on the ground has been recently passed on by the Attorney General, State of Washington. He states in effect as follows:

"No one responsible for a slashing which creates a menace to adjoining property could maintain the same unburned or undisposed of because of some timber which he neglected to remove. When an operator starts to remove timber all that is of value should be taken out at the one operation so that the menace created by the slashing can be disposed of without unreasonable delay."

The U. S. Weather Bureau at Portland is cooperating with the District Office in fire prevention by running special slogans in large type on its daily weather maps. This good work was started during Forest Protection Week, and has been running ever since. As the weather maps are posted at tourist camping grounds, this fire prevention propaganda reaches a large number of visitors from other States.
(Why not cooperation of this kind in other Districts?--Ed.)

DISTRICT 7 - EASTERN DISTRICT

Soldierettes Taught Forestry: A series of talks on forestry is being given to the camp of the Women's United Training Corps near Asheville, N. C. by various State and Federal officers.

Forester Holmes opened the series. Mr. Frothingham, Director of the Experiment Station, followed. The next in line is the Supervisor. Dr. Pratt, Mr. McCarthy and others are on for the balance of the program.

There are several hundred women in attendance at this permanent camp, from all of the Southern States. Locally they have been dubbed "soldierettes," a term to which they take violent exceptions, since, as they say, they are not a military camp, but a health-making camp, under regular discipline.

Weeks Law Cooperation: At a recent conference in the Pisgah Supervisor's office, Dr. Joseph Hyde Pratt, Director of North Carolina Geological and Economic Survey, J. S. Holmes, State Forester, W. D. Clark, State Firewarden, and local officers of the Forest Service, discussed plans for the best use of the Weeks' Law Cooperative Fire Fund. The mountainous part of this State is being districted for fire patrol to begin this fall.

Messrs. Frothingham, McCarthy, and Haasis of the Appalchian Forest Experiment Station made a three days' trip into the spruce belt of the Great Smokies the last week in July. They were piloted by W. J. Damtoft, formerly of the Forest Service, but now Forester for The Champion Fibre Company.

Pisgah Forest Timber Sales: The present depression in the lumber business is clearly reflected on the Pisgah National Forest in the number of new sales, since only a few small sales have been made recently. However, it is gratifying to report that the actual cut from January 1 to June 30, 1921, is the largest in the history of this Forest. During this period the actual cut amounted to 5,538 M feet B.M., valued at $15,351.80. Cheap labor and the purchasers of the largest sale being an Extract Company, are the factors favoring this cut.

DISTRICT 8 - ALASKA DISTRICT

Flory Moves to Juneau: Effective September 1, the headquarters of the District Forester for District Eight will be Juneau, Alaska. The delay in the establishment of offices at Juneau was occasioned by the stress of business that required Mr. Flory's attention, and because he wanted to make every day of the field season count.--P.D.K.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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AIRPLANE FOREST PATROLMEN KILLED

Cadet Robert Noelp, pilot, and Sergeant T. J. Whissiel, observer, of the Airplane Forest Patrol, were killed on September 4, when their plane side-slipped and took a nose dive of 250 feet near Montague, California, on the Klamath National Forest. The plane was destroyed by fire resulting from the explosion of the 75-gallon gasoline tank after the machine struck the ground.

On the day of the accident, the plane took off from the landing field at Montague at 1.55 p. m. on the afternoon lap of the patrol from Montague to Corning. When the plane reached an altitude of about 250 feet the pilot banked sharply with a view to bringing the machine about and heading south. The turn was made but a few hundred feet from the side of Gregory Hill, and it is believed that while in this sharp bank the ship was struck by an eddying gust of wind which sent it into a side-slip followed by a nose dive. The plane struck the ground with terrific force, and it is certain that both men were killed by the impact.

Pilot Noelp was but little known on the Klamath, having been but recently detailed to the Forest. Sergeant Whissiel was one of the most efficient observers in the patrol service, and a man who had had large experience. He was wonderfully genial, and his practice of dropping the San Francisco papers every Sunday morning at the lonely lookout stations along the patrol route particularly endeared him to the officers of the Klamath.

FOREST FIRES IN THE NORTHEAST

By Louis S. Murphy, Washington

During the past few years the Northwest, the Lake States, and the South have successively experienced extreme fire conditions. During this period the Northeast has escaped with little more than normal fire hazard. This year apparently the Northeast is to have its turn. Summaries were recently secured showing the fire situation for the first half year for two States--Massachusetts, representing the hardwood group of the Northeast, and New York, representing the softwoods. Taking the fires for the first half year as indicative of the severity for the entire year, it is found that the hardwood group as represented by Massachusetts has experienced a fire hazard 66 per cent above normal, while in the softwood group it has been 68 per cent above normal.

Forest Fires in the Northeast (Cont.)

This would mean in terms of National Forest acreage a total of 131,000 fires per annum based on the Massachusetts data. Compare this with the 7800 fires which occurred on National Forests in 1917, the record year to date,-- nearly 16 times as many fires as were handled in that record year.

There is, of course, no possible comparison between forest conditions in Massachusetts and average conditions on National Forests. But with New York and Maine in the softwood group, conditions are often strikingly similar. Those who doubt this similarity should have talked as I did recently with a man who has traveled the National Forests for years, and who had just returned from a week's trip with Forest Commissioner Dana in the wilds of Maine. His first trip into the "big woods" of the Northeast gave him a real surprise. He could not recall previously ever having traversed so continuous an extent of unbroken forest as on that trip. Yet he could have gone on twice as far again as he did and only then have reached the northern Maine boundary and have had still many more miles left of the same going between there and the St. Lawrence.

With the increased fire hazard as indicated in the two groups of States the "area burned" in the hardwood group exceeded the 5-year average by 92 per cent, while the "amount of damage" was increased 115 per cent. In the softwood group the "area burned" was 150 per cent greater and the "damage" nearly 500 per cent greater. It would be unfair to draw the inference from this showing that the protective work in the softwood group was several times less efficient than in the hardwoods. As a matter of fact, with a considerably larger total acreage under protection, the actual area burned over in the softwood group was a third less than that burned over in the hardwoods, while the actual damage in the softwood group was only one-fifth of what it was in the hardwood. The protective organization in the softwood region holds its fires under much closer control than is done in the hardwoods.

In the softwood group, as represented by New York, there are on the average 25 per cent less railroad fires and 40 per cent less brush fires, while there are three times as many campers' fires and four times as many miscellaneous fires than in the hardwoods. Considering the fires by cause in the hardwood group, as represented by Massachusetts, the principal increases the present year occurred in railroad fires with 81 per cent increase, brush fires and campers' fires each with 150 per cent increase, and miscellaneous fires with 45 per cent increase. In face of the general increase in the number of fires, it is interesting to note that in the number of "unknown" fires there was an actual reduction of five per cent, indicating a stiffening up in the general activities of the protective organization.

A Scheme for Uniform Insignia

I am a strong advocate of the Forest Service uniform. I have not yet been converted to the idea of insignia indicating rank and length of Service; but having failed to see any definite proposals for different types of insignia from the advocates of those ornaments, I have ventured to jot down a few rough suggestions for them.

Insignia of Rank:

Fire guard - - - - - Streak of lightning (indicating the source of 52% of his troubles and his theoretical speed in getting there).
Ranger - - - - - - - Goat butting stone wall
Forest assistant - - Bursting bud, with pink bow of baby ribbon
Grazing assistant - Bull, rampant
Recreation engineer- Thermos bottles, crossed
Lumberman - - - - - Low stump, brush piles in background
Supervisor - - - - - Bull whip, coiled
Ass't.Dist.For.- - - War club, natural, unstuffed
District Forester - -

but here imagination fails, and I leave it to the insignia advocates to finish this list.

Length of service could undoubtedly be indicated by chevrons; but it is already indicated to the trained eye by many other things, e. g.:

A Scheme for Uniform Insignia (Cont.)

First year: Still wears high-heeled boots, leather cuffs and six-shooter. Practices throwing lariat.
Second year: Can tell steer from bull
Third year: Can flip flapjacks in frypan
Fourth year: Marries schoolma'am at crossroads
Fifth year: Studies Holt's "The Care and Feeding of Infants." Quits riding broncs.
Sixth year: Asks for bathtub for station (see 13th year for answer)
Seventh year and on: Seasoned veteran but no sign of overmaturity.

Thereafter years of service can be further checked by noting gray hairs on temple, crowsfeet at corners of eyes, and the growing tenderness in old Dobbin's front feet.--Sage-brush Sam.

More Fire Deficit

By Paul D. Kelleter, Washington

Authority has been requested of the Secretary to incur an additional deficiency of $50,000 to meet the liabilities for fighting fire since July 1, 1921. On the basis of the ten-day reports submitted September 10 expenditures have reached $425,118, with the end of the fire season not yet in sight.

The general outlook is good and there is strong feeling that the present season can be closed with $450,000 as the maximum. This optimism is occasioned by the reports from the districts.

District 1: Reports snow and frost in the high altitudes and generally stormy throughout the district. The protective force is being disbanded very much in accordance with the schedule laid down in the Forest estimates. All emergency patrolmen have already been laid off. Within the last ten days there were 65 fires, eleven incendiary, seventeen Class C. Expenditures $275,000.

District 2: The conditions continue hazardous in the Bighorn Mountains in Wyoming and the Black Hills in South Dakota; otherwise normal. Expenditures $4,654.

District 3: Season closed since the end of July. Expenditures $4,147.

District 4: General rains throughout and season apparently over. Expenditures $6,337.

District 5: No large fires. Country continues very dry and warm, but nights are becoming cooler. High winds reported in many localities. Hazard by no means over, because of the presence of many hunters and campers in the mountains. Expenditures $77,000.

District 6: Conditions generally good except in southern Oregon, where country is still dry. Expenditures $53,565.

District 7: Conditions excellent. Expenditures $2.00.

District 8: No fires.

New Highway Legislation

The Federal Highway Bill, which is a compromise of the Phipps-Dowell and Townsend bills, contains the following interesting features in connection with interstate highways:

1. The bill confirms all federal expenditures to 7 per cent of the total mileage in each State, and requires that 60 per cent of the funds shall be expended upon three-sevenths of the 7 per cent of mileage which shall consist of the primary roads of interstate importance. A further proviso gives State highway commissioners the right to exceed the 60 per cent where they deem it desirable. Under no conditions can more than 40 per cent be expended on the State highways which comprise the remaining 4 per cent of the total seven.

New Highway Legislation (Cont.)

2. Under the provisions of the bill, $75,000,000 is appropriated for road expenditures for this year, $25,000,000 of which becomes immediately available, the remainder available at the end of six months. A sum of $5,000,000 is appropriated for the construction of roads and trails within forest reservations.

3. Drastic maintenance provisions, a flexible formula of matched funds for those States having 5 per cent or more of their area held in public lands, more rigid requirements governing types and surfaces of highways, a clause that States must match federal funds with funds from State sources or so controlled (with a two-year exception to enable changes in laws), a paragraph directing the Secretary of War to transfer surplus material available for highway use to the Department of Agriculture, are some of the other provisions which make the measure as a whole a distinct advance over existing statutes.

4. The form of administration seems to remain unsettled as yet and not likely of decision before the report of the reorganization commission has been completed.--Clipped.

MY FRIENDS

My friends - my friends - my friends are these,
The streams, the mountains and the trees;
Their branches by the breezes fanned
The verdant stretch of forest land,
Beneath God's canopy of blue
There are no friends more staunch or true.

My friends, the mountains, streams and trees
Reflect my deepest sympathies.
They speak to me of age and youth
They speak with gentle tongues of truth,
Of hope and love as deep and broad
As the beneficence of God.

They seem, above the sordid strife
To show the finer things of life.
So high they stand above the crowd,
And in my heart - ah! I am proud
To have such lovely friends as these
The streams, the mountains and the trees.

--Harry T. Fee in Stockton Record.

How Not To Have Fires "Get Away"

(Extracts from a report)

By James W. Girard, D-1.

It is believed that all Forests are failing to use to the fullest extent the opportunity they have of instructing men how to handle fires most effectively after they are under control. Very few fire fighters know how to put out burning logs, smoldering duff, etc. Many fires break away because they are not properly handled after they are under control. Fire near the outside edge of the burn should be put entirely out. It does very little good to throw dirt on burning duff and logs.

Banking logs often results in the fire later getting away. It is often advisable to bank burning logs during the hot, windy portion of the day to hold the fire down and prevent sparks from blowing across the line and starting new fires, but before these logs are left they should either be cut up and carried far enough inside the burn to be safe if allowed to burn out, or the burning portions should be cut off and buried in mineral soil. If a hole is dug in the mineral soil and the smouldering duff and burning logs are properly buried, there is no question about such fires going out.

How Not To Have Fires "Get Away" (Cont.)

The importance of properly handling the smouldering fires near the fire line can not be too strongly emphasized. Rangers, foremen, and patrolmen, should be thoroughly instructed on this particular phase of the work. All patrolmen should be shown how to do the work most effectively.

The patrol should be better organized. On all fires large enough to require more than one patrolman, the line should be carefully gone over and the patrol laid out in stations or sections and a patrolman assigned to each section. If the line is laid off into patrol beats and each man is given a designated portion of the line to take care of, it is believed that fewer fires will break over the line. Trees can be squared up or blazed on the fire line and the stations numbered. This will definitely tie down the responsibility of each patrolman and he will be much more interested in his work.

These suggestions are offered because I know their value from actual experience.

It Is To Weep

I have just been viewing the remains. No, not of some dear departed friend, but of a very fine photographicglass plate borrowed by a Forest officer from a personal friend and sent to Washington for reproduction. From the scraps we were able to piece together it was evident that the scene represented a wonderful mountain view with a background of billowy clouds--the kind of picture you always want to take, and only get once or twice in a lifetime. This particular negative came in a cardboard box along with half a dozen other plates all packed in together. Happily it was the only one broken, but that was just good luck and not good management. The same thing, I know, has happened to plates sent out from this office. Let's put a stop to this kind of business. It is no joke to have to explain to a friend that the negatives he loaned you for Service use have been broken or lost. Here are a few pointers which may help:

1. Borrowed negatives (film or glass) should always be sent by registered mail or express, and marked with the address to which they are to be returned. Also include a reference slip to the number or date of the requisition sent under separate cover.

2. Glass plates should be packed with cardboard between each plate, and shipped in a wooden box. Mark the box "Glass-Photo Plates," and see to it that the packing is done right.

3. Under separate cover send a letter advising that shipment has been made, together with a requisition for photographic work desired. Forward a description of each negative, and do not fail to state the conditions of the loan, that is, whether the owner is willing that we should re-photograph the negatives and use them in connection with Service reports and PR work. If any special credit for use of the negatives is required, do not fail to so state.

In connection with our photographicwork, a few other points that have come to my attention may be of interest to field men.

1. Each package of roll film or film pack sent in for development should be marked on the outside with the temporary numbers of the negatives enclosed. Without this is done it is very difficult for Photography to tie-in the negatives with the temporary numbers and descriptions given on Form 166.

2. Every Forest Service photograph, whether given away or loaned for any form of use should carry our identification stamp. Two such stamps (rubber) are used in the Washington PR office.

(a) For gifts or educational loans:

PHOTO BY
U. S. FOREST SERVICE
WASHINGTON, D. C.

(b) For newspaper or magazine use, where the picture is to be reproduced:

IF THIS PICTURE IS REPRODUCED
USE THE FOLLOWING CREDIT LINE
"PHOTO BY U. S. FOREST SERVICE"

- WH.

WASHINGTON NOTES

Associate Forester Sherman and Assistant Forester Carter are back from Alaska. They report a wet but interesting trip. We hope that they will tell us something about it later.

Assistant Forester Headley has gone West on an inspection trip to Districts 3, 4, and 2.

National Forest Receipts for the month of July, 1921, are reported as $199,601, a decrease of $51,208, as compared with the net total for the same period last year.

Forest Inspector W. I. Hutchinson recently returned from a two weeks' trip in the Ten Thousand Lakes region of the Superior National Forest, with a party of 24 business, newspaper, motion picture, and Forest Service men from St. Paul, Minneapolis, Duluth, and Ely, Minn. Mr. Ralph A. Graves, Assistant Editor of the National Geographic Magazine of Washington, was also on the trip, the purpose of which was to awaken interest in the wonderful commercial and recreational resources of the Superior Forest.

The MANILA DAILY BULLETIN for July 29, just received, carried over fifty columns of publicity and photographs on the forests and lumber industry of the Philippine Islands. Articles by Major General Leonard Wood, the new Governor, Director of Forestry Fischer and other prominent lumbermen and foresters combined to make a very interesting and instructive edition of the paper.

Colonel Greeley returned to Washington on September 13 from a brief inspection trip in North Carolina.

Bull's-Eye Bob: Camp Perry, Ohio, Sept. 9: R. Y. Reynolds of the United States forest service, captain of the District of Columbia civilian team, shooting in a stiff breeze at 800 yards, scored sixty-two consecutive bull's-eyes in the Winchester match, using telescope sights and Springfield special ammunition.--Washington Star.

WESTERN UNION

Washington, D. C. September 10, 1921.

Bulls Eye Bob,
Captain District of Columbia Civilian Team,
Camp Perry, Ohio.

Forest Service friends send congratulations on string of bulls eyes. Dont forget to stop for meals.

All of Us, Forest Service.

FOREST PRODUCTS LABORATORY

Kiln Expert Goes to Australia: Mr. H. D. Tiemann left on August 29 for Vancouver from which point he and his family sail for Australia to be absent eight months. En route stops will be made at Honolulu; Siva in the Fiji Islands; Augland, New Zealand; and Sidney. From Sidney they will proceed to Melbourne by rail. The trip is being made at the request of the Australian Government and for the purpose of giving advice in the operation of water spray kilns installed in that country and also in working on some of the problems in connection with the drying of Australian hardwoods.

"Smash Your Baggage": That was the cry of the station porters offering assistance to travelers in years gone by in New York. To-day the Laboratory can repeat the refrain but with a totally different meaning. A cooperative test of five baggage trunks has just been finished by the Box Laboratory at Madison for a prominent manufacturer of this necessary travel adjunct. Two of the trunks were the well known "indestructo" brand and the balance lighter trunks of another trade name put out by the same firm. A uniform load of 16[illegible] pounds of lead and 240 pounds of cloth was put in each trunk before being shoved into the maw of the big testing drum. One of the"Indestructos" stood 5000 drops against the hazards before yielding its contents. The lighter trunks took the count at various points below 2000. After the tests they all still looked like trunks--but no baggage master would ever pass one for checking.

First Hand Evidence: The Laboratory is modest, if nothing else, but here's a story too good to keep. A prominent Madison business man, just returned from a tour of Europe, in which he visited England, Norway, Belgium, France, Germany, Switzerland, and Italy was overheard to say, "I'll tell you Madison is on the map! In every country we visited, not one but a number of times, when we said we were from Madison an exclamation of recognition of the name escaped the Englishman or Frenchman or whoever he happened to be. They had heard of us. The reason?--well to a large degree because of our University but by all odds mostly because of the Forest Products Laboratory. It seems to be known everywhere."

DISTRICT 1 - NORTHERN DISTRICT

Come When Called: Charles Smith of White Sulphur Springs, Mont., recently refused to obey a subpoena issued by the Register of the Land Office at Helena, to appear as a witness in the case of United States v. William I. Reed, Jr., involving Homestead Entry 012647, which refusal constituted a violation of the Act of January 3, 1903 (32 Stat., 790). It cost Smith $25 fine and $205.84 in costs to learn that when Uncle Sam says "Come" he means it.

Dover Lumber Company Will Go to Bat: The Dover Lumber Company which is held to be responsible for a fire on Martin Creek on the Cabinet National Forest, which cost $10,806.57 to extinguish, refuses to make settlement, and steps have been initiated to bring the trespass case to trial.

In declining to make voluntary settlement the company indicated that it did not hold itself responsible for the fire, that it had spent considerable money in fighting the fire and that at the time the Forest Service took charge the fire was under control.

The company furthermore believes that the fire was of incendiary origin and because of these various conditions does not feel that the responsibility rests upon the company.--PK.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

South Entrance Road to Yellowstone Park Opened: District Forester Peck and District Engineer Mendenhall, together with officers of the Washakie recently attended the opening of the south entrance road to Yellowstone National Park, held on top of Twogwotee Pass between the Washakie and Teton Forests in Wyoming. There were about 600 people present including Governor Carey, Senator Kendrick and other state officials, Superintendent Albright of the National Park, a group of Northwestern Railroad men and a number of newspaper men of Wyoming and Colorado. Over 125 cars went up to the Pass, and a large number continued on to the Lake Hotel in the Park where the ceremonies, which were interrupted by a hail storm, were concluded. The south entrance via Moran is the terminus of the newly christened Rocky Mountain Highway which starts at Denver.

Redistribution of Fire Caches: Past policy has resulted in the establishment of a great number of fire tool caches throughout the Forests of D-2. Careful consideration of this matter is resulting in decreasing the number by a very large percentage. The location of remaining caches is dependent largely upon the available supply of men, and it has been found that caches near timberline and at very remote places have not been justified.

Ranger W. E. Jennings of the Rio Grande Forest, severed his connection with the Forest Service on August 31. He is taking a position with Dr. Taylor, of the Rainbow Trout Lodges, Inc., who is actively interested in developing a recreational resort in the Forest. It is understood that he will have direct supervision of the activities at and near the camps, somewhat in the nature of a Superintendent.

DISTRICT 2 (Cont.)

Decrease in Grazing Permits for 1921: Permits were issued for 489,826 head of cattle, 15,330 horses, 1,385,239 sheep and 1,156 goats for the fiscal year 1921: for the fiscal year 1920, the numbers were as follows,--501,543 head of cattle, 15,426 horses, 1,411,560 sheep and 1,121 goats, showing a considerable decrease for the year just past. There are a good many of our sheep ranges which went begging last season and we are expecting this lessened demand to continue not only with sheep but with cattle for two or three years to come.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

A Blow-out on the Boise: Supervisor Grandjean had a peculiar accident the other day. He arrived in camp after a smokeless journey on the Forest and lit his pipe. After one draw he was nearly knocked over backwards by the explosion. Upon investigation he found that a 22 shell that he was carrying in his pocket had lodged in his pipe. The pipe was a total wreck and he is suffering from a badly bruised eye as a result of the accident.

Leave It To A Woman: Mr. Gery and Mr. French yesterday in company with Supervisor Parkinson and numerous distinguished Utah Scientists examined the new Wonder Cave in the American Fork Canyon, which a Mr. Gough of Lehi in 1915 attempted to obtain under the mineral law. Mr. Gough until about a week ago managed to keep the location of the cave a secret. When approached by the Supervisor he offered to lead the Forest officers to the cave for $10,000. The Wasatch allotment not permitting so large an expenditure, the Supervisor and Deputy decided to find it themselves, which they did in a most surprising manner. Ranger West and Assistant Supervisor Mann, last Sunday started out in search for the cave. Mrs. Gough, apparently forgetting that her husband desired the location of same to remain a secret, in a general way described the nature of the ground in the vicinity of the cave to a neighbor. This information reached the Forest officers. They had just about reached the place, but had not discovered the opening, which is only about 18 inches by 3 feet, when to their amazement 15 or 20 people crawled out on their stomachs right at their feet. Thus $10,000.00 of Uncle Sam's hard earned money was saved. The scientists who visited the cave yesterday agreed that it contains wonders of the first order and the feeling was unanimous that the entrance must immediately be closed by a gate or otherwise to prevent vandalism. Temporarily Supervisor Parkinson has posted a guard on the road controlling assent to the mountain side where the tunnel is found.

Salt Lake City,
Aug. 22, 1921.

Dear Mr. Scott or Whoever Edits
The Intermountain District News,
United States Forest Service,
Ogden, Utah.

Once upon a time I found a dandy little news story tucked away down in one corner of the Intermountain District Daily News and it said:

"Mr. Jones fell out of a tree and dislocated the transmission of his basic vertebrae while trying to find out the color of a bobcat's eyes."

But I couldn't use the story because the city editor didn't know who Mr. Jones was, or what tree he was climbing. So, please Mr. Editor of the News, won't you make your reporters turn in better stories, something like this:

"Oscar P. Jones, assistant forest supervisor on the Hardscrabble national forest of southern Utah, fell out of a tree on August 20 while trying to prove to his own satisfaction the color of a bobcat's eyes. The accident occurred about four miles south of the ranger station at Hardup. Mr. Jones, who suffered a broken thumb nail on his left foot, was taken to Broken Jaw for medical treatment."

I believe the Forest Service boys appreciate the value of publicity and I, for one, would like to help them get it whenever possible.

Very truly yours,
A Salt Lake Reporter.

R.H.AUGUGRIGHT
Federal Bun-Evening Telegram

Baker Returns from the Cache: Mr. Baker returned yesterday from the Cache, after having spent a good part of the summer on the north end of the Cache National Forest, where three sample plots have been laid out. These sample plots are areas of Douglas fir, upon which all the trees have been marked with numbered tags and whose diameters have been taken. Five years later we will remeasure the diameters and find out what the growth has been. Two of the plots are to be cut over in the near future, one of them on the selection system, which is in common use at the present time and the other upon the scattered seed tree system in which everything that can be used is cut with the exception of about 5 large trees to the acre which are left to seed up the area.

Hiking on the Wasatch: The 1921 Timpanogos Hike held this summer was the largest to date. There were eight hundred people who left camp for the hike and five hundred reached the top of the mountain.

The most thrilling part of the climb is the descent over the glacier, where you sit down, raise feet and hands, turning all holds loose, and slide for a quarter of a mile or more. The first hundred yards of the slide is at an angle of about seventy-five degrees and gives a sensation that far excels the Saltair Racer or Lagoon Dipper. In watching hundreds of people come down, not one makes a graceful descent, but everyone enjoys it.--Wasatch News Letter.

Ranger Bill Says

The wisest Forest officers I've met are the fellers that don't know it all, and never will as long as they live and think.

Daisy Looker, our new fire observer at the Tip-Top Station, reported three "smokes" in the same place last week.

Ranger B. Laze says he made camp three times the first day after he signed that "no smoking" agreement.

DISTRICT 5 - CALIFORNIA DISTRICT

Red Cross Donations Grow on Plumas Pines: Plumas County claims the highest Red Cross contribution box in California--a pasteboard box nailed to a pine tree on the summit of Mt. Elwell. When Miss Mollie F. Ingoldsby, Forest Lookout, took her post on Mt. Elwell early this summer, she nailed up a tiny contribution box on the topmost point of the mountain. Since then hundreds of tourists have climbed the mountain on picnicaand outing parties. Sunday the contribution box was opened and in it was found donations amounting to $8.50. The money was brought to Quincy by Miss Gladys Huskinson, of the Forest Office, and will be forwarded to Red Cross headquarters.--Plumas Bulletin.

Angeles Force Hard Hit: On the night of August 19 (about 10:30 P.M.) while returning to Los Angeles from a fire near Banning, Forest Supervisor Allen a Clerk Lackey struck a truck on the highway near Puenta. Their car turned completely over and both men were painfully injured. Mr. Allen had several bad cuts on the head and face, which required a number of stitches, and Mr. Lackey suffered from a broken or dislocated wrist and an injured foot. Allen is at home and will probably be back at the office in a few days (if he is not already there) but Lackey will be confined to the hospital about three weeks.

While returning from the Pine Mountain fire the night of August 24, Mr. Charlton and Rangers Buxton and Mueller of the Angeles Forest, were overturned in a car near Santa Barbara. The car made a complete somersault, but fortunately no one was seriously hurt. The only damage was a badly skinned nose for Ranger Buxton.

More Forest Service Stories: Ralph Cummins, a writer of fiction based on Forest activities, plans on spending the month of September on the Klamath and Shasta Forests, where he will collect data for some magazine articles. Commencing in the October number of Sunset, Mr. Cummins will have a serial story entitled "The Fire Fighters."

Movie Actors Fight Fire: At the time the Converse fire started, Semon's Company of Vitagraph moving picture actors was camped at Hume. They immediately volunteered to send some of their help over and the offer was accepted. After these men had been on the fire line some 24 hours, word was received in the Movie Camp--via grapevine wireless--that if their men were to be saved, prompt and heroic action was necessary; consequently all hands strapped on sidearms and came to the base fire camp, where they were informed their comrades were probably tired but safe, and if they wanted to find them it would be necessary to go out on the fire line. They continued toward the fire and met a man coming for fresh fighters, with the result that they landed on the fire line. The other movie actors had just been sent home, tired, footsore, but happy and well. After 48 hours on the fire line this bunch was excused. They showed excellent spirit, worked hard, made no complaints and when leaving said they were much pleased with the experience and would willingly return for further duty if needed.--Sequoia.

Ranger Gives Party to Tourists: The Laguna R. S. office has just been completed and on the night of July 16 Ranger Miller, in charge of the Laguna Recreation Area, gave a party, which was a real party and will go down in history as one of the big social events of the area. There were talks by a member of the Y.M.C.A. and Miller, music, dancing and good eats. The chief object of the party was to bring the patrons of the area close together and create still stronger in their minds that we are, after all, just one big family.--DuBois.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Strike Oil on Mount Hood: Lookout men Blakney and Smyth were digging away industriously at the deep, hard packed snow on the summit of Mount Hood, when a party of tourists arrived at the top.

"What are you prospecting for?" asked one of the visitors.

"Oil," replied Smyth, without ceasing his efforts.

Sadly and significantly the visitor shook his head and passed on. He was surprised a few moments later to hear one of the men say, "We've struck it!"

On investigation he found that the diggers had actually struck oil, coal oil in five gallon cans, cached there by the lookout men when they left the mountain top at the end of the preceding fire season.--A.G.J.

The Completion of Lakeview-Silver Lake Road to the Chewaucan River makes available one of the finest camping grounds on the Fremont National Forest. The necessary measures to provide for sanitation and preserve the scenic value of the site have been taken.

Good fishing and hunting are available from this point, and probably a greater variety of game is found here than in any other one part of the Forest. Mule deer, grouse, sage hens, ducks and geese may be secured in season. Just now the fishing is good and Rainbow trout is one of the chief items of the road camp menu.

"'Twas Not Like This in the Olden Days": Walter Allan, a fire guard on the Cascade National Forest, was recently stopped by an auto tourist on the Willamette Highway and subjected to a lengthy questioning as to the why and wherefore of roads, campgrounds, and the like. All questions were answered with evident satisfaction to the tourist who at about the termination of the conversation noticed the Forest Service badge pinned to the guard's shirt. As he drove away he said, "I knew I'd get the right dope as soon as I found a Forest Service man."--G.W.R.

Lookout Reports Blast Smoke Seven Miles Away: "Fire!" shouted the foreman of the construction crew on the Fifteen Mile Creek trail, as he lighted the fuse and hastened away.

"Boom" went the blast, and its mushroom of smoke rose above the tree tops.

"Fire" thought Curtis Gould on Lookout Mountain, as he saw the rising smoke and quickly read its bearing and estimated its distance away.

"Southwest quarter of section 23, township 2 south, range 11 east," stated the platting agent, after he had applied protractor and scale to the map.

"It's up near the trail crew," said Ranger Brown when he received the report. "I'll get them out on it at once." Then he called up the crew and learned there was no fire near them.

"I don't see it now," reported the lookout. Then Brown had another idea. "Watch close at 2:30," he advised over the phone.

At 2:30 the trail crew put off another blast whose smoke rose as before and was observed by Gould.

"It's one on me," he called over the wire.

"You're sure on the job," the Ranger called back.

It happened on the Oregon National Forest.--A.G.J.

Game Protection: Assistant District Forester Kavanagh recently was in conference with Supervisor of Game Kinney of the State of Washington, regarding cooperation between the State and the Service. An agreement has been signed which is regarded as very satisfactory (for which there has been a need for some time) which provides for all Forest officers accepting game warden deputyships.

DISTRICT 7 - EASTERN DISTRICT

Good News for Acquisition: In order to relieve the United States Attorneys office of the large volume of work incidental to the acquisition of lands under the Weeks Forestry Law, the Attorney General has recently commissioned several of the Title Attorneys of the Solicitor's Office of this Department as assistants to United States Attorneys. The Title Attorneys so commissioned will continue under the direction of the Solicitor's Office, to examine the titles and prepare abstracts thereof as in the past, but will, in addition to that work, assist the United States Attorneys by passing on the legality of acquisition by direct purchase and in the preparation and handling of the condemnation proceedings. It is anticipated that by these appointments the work of acquiring lands either by direct purchase or through condemnation suits will be materially expedited, and the many delays experienced in the past reduced to a minimum in the future.--C. G. Smith.

Washington Personnel:

Forest Inspector Dieffenbach, who has been in the field since the latter part of June, is back in town. While in the field he visited the Unaka and White Top, the Pisgah, Nantahala and Cherokee. On the latter Forest he made a preliminary examination of a tract of about 80,000 acres.

National Forest Examiner Fletcher has returned from a trip which took him over portions of northwestern Connecticut, western Massachusetts and eastern New York State. He also examined an area in the extreme northwestern portion of New Jersey, joining areas in Pennsylvania and New York. The object of these trips was to investigate the conditions and later reports will be submitted as to the advisability of recommending new purchase areas. He is reluctant to examine a proposed area in the war-torn area of West Virginia until the smoke of battle clears.

Messrs. Greeley, Kneipp, Peters and Reed, have within the past two weeks made an examination of areas offered for purchase on the Unaka and White Top Forest. After conclusion of this trip, the members of the party returned to Washington except Mr. Reed, who continued south to the Cherokee and Alabama.

Captain Eldredge spent 10 days during the latter part of August in Officers Training Camp at Camp Meade, Md.

Assistant District Forester Stabler returned on August 31 from a trip of inspection on the Monongahela Forest.

Locating Signs

Slogan signs are attractive, but the effectiveness will depend much upon the way they are located. The Thomas Cusack Sign Company claims that 75% of the effectiveness of the outdoor sign is its location.

There are three methods of showing used in placing signs.

(1) The "Head-on" in which the sign is located so the traffic travels directly towards the face of the sign.

(2) The "Semi-head-on" which is placed at an angle of approximately 60 degrees with the road, and which is seen by the traffic at this angle.

(3) "Parallel" which is placed parallel to the highway and may be seen equally well by the traffic traveling in either direction.

If traffic can pass the sign at a high rate of speed (more than 15 miles per hour) the "head-on" showing is best. When the speed is limited (8 to 15 miles per hour) or an extremely long view can be gotten, the "semi-head-on" is more effective. A sign should be placed parallel to the road only at points where traffic must slow down to less than 8 miles per hour or where it can be placed at a distance of more than 100 feet from the road.

Erect signs where they will have a green background of trees and foliage. This will add much to the effectiveness of the signs.--Pennsylvania Department of Forestry.

Wood Holds Its Own

Time and again we hear the substitute man thundering his protest at the use of wood for some purpose to which he thinks it is unsuited. Sometimes his protest is fair, sometimes not. It was not exactly fair when he claimed that wood was no longer suitable for the pontoons or bridge boats used by military engineers. A long series of tests with steel, aluminum, and wooden pontoons just completed at Camp Humphreys, Va., by the Corps of Engineers reveals the fact that wood holds its own. True, aluminum pontoons will endure hot climates better than wood, are lighter and more easily transported, and load and unload more readily, but wooden pontoons do not sink as easily, they are more readily repaired, can be more quickly constructed, cost less, are considerably stronger than aluminum pontoons in bridges over water as well as over marsh lands, gravel, sand, etc. In addition to all this they behave better under rifle fire. Not as much can be said for steel as for aluminum, so friends, lose not your faith in the homely old friend Wood.--J.B.Cuno, Washington.

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Too many people do not know what to do with the great outdoors except to eat in it.--Leavenworth Post.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. V, No. 33. Washington, D. C. September 26, 1921.

THE COST OF LIVING

There is a slow but steady decline in the cost of living, so the experts say. Before the winter is over this decline, they predict, will be sufficient to justify new computation of wage scales next year. Forest officers will be interested in the latest, 1921, statistics just issued by the National Industrial Conference Board. All index numbers are based on July, 1914.

Item	Peak	Present Per Cent Below Peak
All items	181 (Jan.)	21
Food	178 (Jan.)	32
Shelter	171 (Mar. & June)	1
Clothing	187 (Jan.)	45
Fuel - light	200 (Jan.)	11
Sundries	192 (Jan.)	5

In weighing the above index it is assumed that the average working family spends 43.1% of its budget for food, 17.7% for shelter, 13.2% for clothing, 5.6% for fuel and light, and 20.4% for sundries.

How does your job in the Forest Service look to you in the face of these facts and figures?

Mutterings of a Supervisor

I suppose all Supervisors and field men generally have the same feeling when they pick up their allotment letter and B-NF for the next fiscal year. It's the same feeling one has when he tops a ridge on a hot, windy day and sees a smoke boiling up out of the canyon. It's that sinking feeling in the pit of your "tummy" that makes you wonder if you have a yellow streak in you somewhere. You see your dreams of accomplishment fade into that same boiling smoke and you wonder how you are going to give Ranger Bill's wife that paper for the kitchen or linoleum for the floor--how that old telephone line can be made to give service another year--what kind of a story you can tell to put heart into the boys so they will forget that salary raise that has been coming for years. The whole year ahead seems such a barren one; so devoid of possibilities and so full of petty economies in order to get by. You cuss the bosses for being so tight; they ought to know your Forest needs all the money so why can't they sandbag Congress and get it? Just like that! Easy? Sure.

When you get that off your chest and the red begins to fade out of your eye you pick up another circular which again emphasizes the necessity for tightening up on protection and warns you to never take a chance,--and the Boss was once a Supervisor, "even as you and I." Big thunder heads are even then creeping up over Peckinpah Ridge making the hot, blistering air sticky; the phone rings and as you take down the receiver the lightning static pops in your ears and you hear Shuteye say "small fire, Daulton Meadow,

Mutterings of a Supervisor (Cont.)

95° from here;" then Baldy checks in on a fire in the Middle Fork and Signal Peak is waiting to get you with one in Devil's Gulch. Three out of the five District Rangers are out on necessary field work. Not take a chance? Oh no, we never do. What do we do? Why, hit the ball, every mother's son of us for about thirty-five days out of every month and come back for more, for we hired out for tough men. But please, Mr. Bosses, remember that we are only ordinary humans out here on the front doing our darndest to keep the old flag from touching and that words of encouragement to all of us are as necessary as to pound us on the back. Remember, too, that when 4:30 comes around most of you go home and forget your troubles while a lot of us are sweating blood on some fire line, and the rest of us are straining our ears for that telephone call to put us on the same line. Don't you think that after you have put it up to us to make good on a shoe string that you are putting one straw too many on the load to take away the solace of our trusty friend, Bill Nicotine? The 18th Amendment didn't hurt us much, but don't push us too far.--M.A.B.

French Forest Management

The Forest Service has recently been the recipient of some valuable typewritten reports and papers dealing with various aspects of forest practice in France. These have been presented by Mr. L. MacIntosh Ellis, Director of the State Forest Service, Wellington, New Zealand, who collected most of the information and data while associated with the French Service Forestiere during the World War.

The subjects deal mostly with working plans of some of the coniferous forests of the Jura and Vosges Mountains. Among these is the State Forest of La Fuvelle, considered as one of the best examples. The plan was largely worked out by Monsieur Broillard, and the C.F.C. operated extensively in this forest. Another is the Communal Forest of Morez.

Other reports in English deal with "Treatment of Regular High Forests in Eastern France" (Traitement des Futaies Pleined); "Some Notes on Forestry - Eastern France;" "The Audiffred Law of July 2, 1913" (La Loi Audiffred); "Revised Instructions on the Management of the State Forest of Mont de la Croix." There are also a number of other documents or memoranda dealing with scientific forest management in France, and a general summary (in French) dealing with areas, timber products, and methods of treatment of the forests of France. This is considered as very valuable information on the methods and results of forest practice in France, and the Forest Service is fortunate in receiving it as a gift from Director Ellis.

The material will be kept in the library at Washington, where it will be available to anyone wishing to use it.--W. R. Mattoon.

"Jack" Crabb--Cowman and Forester

By Will C. Barnes

The report of the recent death of "Jack" Crabb at Flagstaff, Arizona, was a shock to his many friends in the Service. Elbert H. Crabb was born in Kansas in 1881, and while almost a boy drifted west, where in Arizona he found congenial occupation as a cowboy and later cattle owner on the open ranges of that State. In January, 1908, he entered the Forest Service as a Guard on the Prescott, a year later becoming full Ranger and soon after promoted to Grazing Assistant, a new position just created. A few months later he became Deputy Supervisor on the old Zuni, now Manzano Forest. In July, 1910, he became Deputy Supervisor on the Coconino, going to the Tusayan in October, 1910, when that Forest was cut off from the Coconino.

In March, 1911, he became Supervisor of the Sitgreaves but resigned within a few days after his appointment to become the manager of a large cattle company grazing several thousand head of cattle on the Coconino Forest with headquarters at Flagstaff. "Mr. Crabb is a forest officer whom the Service can ill afford to lose," was the comment of the District Forester when forwarding Crabb's resignation to the Forester's office.

As a cattleman, Crabb quickly took the leadership in matters pertaining to that industry in the southwest. He was for several years President of the Arizona Cattle Growers Association and was considered one of the really big men in the industry in the southwest. As a member of the Advisory Board of the Arizona Association his advice and counsel was of great value and eagerly sought by both sides, for while he had a deep appreciation of the needs and desires of the western stockmen, he realized fully the character of our work and the desirability of aiding us in carrying it out through the most thorough cooperation possible. He will certainly be missed in the meetings of the western livestock associations, both State and National, and his early death will be deeply regretted by his many friends all over the west.

Watch Your Step

By Paul D. Kelleter, Washington

General Dawes has the center of the stage. The elimination of waste and the practice of every possible economy is the objective. The country at large seems to have enlisted as volunteers or dollar-a-year-men to put it over. Observers are to be found everywhere and are bringing to the attention of the Budget Bureau reports of transactions that in their judgment have the appearance of waste, poor judgment and inefficiency.

The Forest Service recently was the subject of a report. The president of a bank in one of the small towns in Montana made complaint that in his neighborhood the Forest Service was buying fence posts at one place and hauling them 30 miles to fence standing timber.

Here, however, are the facts. The Forest Service purchased, at the nearest market, 150 cedar telephone stubs at 35 cents each and hauled them 30 miles at a cost of about 15 cents per stub. It cost approximately 50 cents per hole to dig the holes and set and wire the stub, making the cost of a cedar stub in place about one dollar. The stub has a life of from 20 to 35 years.

Native lodgepole or fir stubs will cost delivered about 25 cents each. It would cost the same for digging holes, setting and wiring the stub, making the total about 75 cents per stub. These stubs would have a life of from 3 to 5 years.

Nuf-sed.

U. S. TO PAY 288 FIRE CLAIMS

Duluth, Minn., September 14.--The United States Railroad Administration will settle immediately with 288 residents of Cloquet, Minn., at 50 per cent of their actual losses sustained in the forest fire of October 12, 1918, according to a letter from James C. Davis, director general, made public here by local attorneys for the administration.

Hand Pumps Effective on Forest Fires

This year for the first time, the Fairbanks-Morse pumps have had a real testing out. Hand pumps and extinguishers have been used for a number of years in the hardwood section of the Northeast with good success. The "big woods" (softwood) sections, however, have done little with them, although some three years ago the first Fairbanks-Morse pump was introduced into the Adirondacks. Not until this present season, however, did the pump get a real try-out on a large threatening fire. Early in the season, it was packed in by a 2 or 3-man crew to handle a large fire in a logging operation. When the foreman of the operation learned what had been sent in he was furious and telephoned around for all the men he could get. When the extra men arrived, however, the fire was under control and was soon after totally extinguished. As a result, that company and several others, also pleasure resorts and estates, have already bought one or more pumps apiece. The State has likewise added several more to its equipment. Pennsylvania is also investing part of its million dollar fire appropriation in these pumps. It thus seems to have made a hit and come to stay in the Northeast as elsewhere.--Louis S. Murphy.

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The modern idea of roughing it is to sleep on a spring bed in a tent near a fashionable hotel, to which you can retreat when it begins to sprinkle.
--Augusta Herald.

Our Lady Nicotine!

By M. S. Brown, Modoc.

Oft, when the fires were burning hot,
And muscles ached from weary toil,
I sought myself a shady spot
For brief respite from ceaseless moil.
Ah! then, the bliss that came to me
Beneath the canopy of green,
While solace sweet I sought with thee,
My Lady Nicotine.

But now, alas, I must refuse
Thy beckoning call to heed,
Since orders say I must not use
Thy vile and filthy weed.
From Oregon to Mexico,
The men in forest green
Must now thy company forego-
My Lady Nicotine.

But why the need to mourn and whine,
We yet may soothing solace draw,
From "Horseshoe," "Star" and "Plug-cut, Fine,"
Or snuffsticks sent from Arkansas.
Your incense sweet we will eschew,
As per Amendment Five Eighteen,
And seek contentment in a "chew"
Our Lady Nicotine.--California Dist. News Letter.

FOREST PRODUCTS LABORATORY

Exhibit for American Mining Congress Exposition: The section of Preservation is collecting material for an exhibit at the American Mining Congress Exposition in Chicago on October 17-25. It is being worked up in cooperation with the United States Bureau of Mines and the Service Bureau of the American Wood Preservers' Association.

A paper on preservation of mine timbers will be presented at the American Mining Congress, which is to be held at the same time by Mr. Horner of the Bureau of Mines and Mr. Hunt of the Laboratory.

An Englishman Writes from Leeds and asks what we know of the relative merits of suitable foreign woods for interior decoration of enclosed automobile bodies. He is the manager of a big English airplane and motor car body building establishment and wants the information for lecture work this coming winter in a British trade school located in Leeds.

Telling Them in the West: A number of cuts suitable for newspaper use have been made showing several of the activities of the laboratory. The making of stock food from sawdust, de-inking of paper, box testing, gluing work, and the new million-pound testing machine are illustrated. These cuts were made at the request of the Southwestern District and are being used in Arizona and New Mexico papers at the present time.

Cranberries: Comes a seasonable inquiry from the Cape Cod cranberry region, bearing on the relative merits of barrels and boxes for shipping the little red berry that plays such an important note in the grand concert of the Thanksgiving table. No data is available on the subject and a cooperative project would be necessary to settle any difference of opinion that may exist.

FOREST PRODUCTS LABORATORY (Cont.)

Athletics: The laboratory, both in numbers and geographical distribution (meaning that most of us stay in Madison most of the time between pay days) has it on our Western and Washington brethren in certain respects. One of these is athletics. A four-team baseball league has just fought through to a finish a stirring season of diamond battles; at the present writing (Sept.15) the male members of the Lab. are whaling the festive tennis ball in a singles and doubles tournament; and this week starts the winter bowling season with eight laboratory teams of five men each in the league. In spite of all this we'd trade a few games for a week's pack trip that one of the wearers of the pine tree badge may indulge in at his desire.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

"Celebrations" and "openings" recently attended by representatives of the Service in this District were those held at Brooklyn Lake in the Snowy Range region of the Medicine Bow by the people of Laramie, and a meeting of the Chamber of Commerce of Boulder on Arapaho Glacier. Brooklyn Lake has been made accessible by the completion of work this summer on a Forest Service road project. The Arapaho Glacier is the center and chief attraction of an area on the Colorado National Forest, for which development plans are now being made by Recreation Engineer Carhart.

Supervisor Accepts Professorship: Forest Supervisor Dwight S. Jeffers, of the Uncompahgre National Forest has accepted a position as instructor at Ames and will leave for his new duties about November 1. Mr. Jeffers' many friends in the Service regret to hear of his leaving.

Timber Sale in Wyoming: Bids have just been opened for the timber on the East DuNoir unit on the Washakie Forest near the head of Wind River. But one bid was received, that of the Wyoming Tie & Timber Company, the present operators in the region. Approximately 750,000 ties are included in this area at the rate of 5¢ per hewed tie and 50¢ per thousand feet for sawlogs. This unit was not included in the original sale to this company, which was made about eight years ago on account of the box canon through which it is necessary to drive the material. Experts have concluded that the box canon can be driven satisfactorily, so the company has decided to take out the sale.

Study of Cut-Over Areas: Forest Examiner Johnson has recently returned from the Black Hills and Harney Forests where he has been making an intensive examination of cut-over areas in the yellow pine type. Similar studies in lodgepole pine stands of the Medicine Bow Forest in Wyoming will also be undertaken.

Big Decline in Price of Oats: Each fall when the new crop of oats is harvested, a carload is purchased in central Nebraska for use at the Bessey Nursery at Halsey for feeding Government teams and hired horses used in planting operations. A car containing 1,600 bushels was recently bought at 30¢ per bushel f.o.b. Halsey. At this time last year the price was 74¢ per bushel.

Trapping Gophers: A crew of men is now engaged in trapping and poisoning gophers in the Halsey plantations on the Nebraska Forest. Gophers destroy large numbers of trees unless exterminated from the areas. The work is being done under the direction of the Forest Service; the wages of the men being paid for by the Biological Survey and their board furnished by the Forest Service.

Ranger Bill Says:

Where's the old-time Forest officer who could solve all kinds of problems without "passin' the buck?"

There's a heap of difference on a fire between discoverin' the origin and the originator.

Now that we're getting back to normalcy, says my wife, I'm figurin' on taking the sheets off the visitin' officers bed.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Speaks Well for D-3: Of the six men thus far assigned to the two new forest experiment stations in the Appalachians and in the southern pine belt, four received their early forest training in D-3. They are Forbes, Korstian, Wyman and Haasis. The three last named were assigned to the Fort Valley Experiment Station. Forbes, though not formally attached to the Experiment Station, spent a summer on sample plot work on the Coconino.

Ward Shepard Leaves the District: Mr. Shepard has been promoted to Administrative Assistant in the Branch of Research at Washington, D. C., for which place he is expected to leave on October 1. An assistant to Mr. Clapp (also originally from D-3). Mr. Shepard's duties will be largely administrative although he will be expected to do some research work. Needless to say, the District is more than sorry to lose one of its best men, although there is some consolation in knowing that through the transfer, the District will have one more good friend and booster at the "source of all things."

Our Respects to Nellie: Referring to Mr. Barnes' article "Photographs Wanted" in the Washington Bulletin of August 22: It is a somewhat hazardous undertaking to secure a photograph of Nellie just as she struggles to her feet. It is, therefore, suggested that an effort be made to have two brave Forest Service photographers on the job which will undoubtedly afford an excellent opportunity to secure an interesting picture of a Forest Officer in action.

Black Rattlesnakes: Mr. Kircher says that when he was a Forest Assistant on the Coconino, ten years ago, he and Ranger L. E. Benedict saw a black rattlesnake at the head of Oak Creek just on top of the rim. They killed that one, too. Only one other specimen has ever been found in Arizona as far as the Coronado can learn, and that was in the Catalina Mts. a number of years ago.

Dear Albert: (Ancona writes his friend Morris after getting settled in his new work at the Laboratory) "Land o' milk and honey! We're wallowing in Wisconsin roasting ears with gobs of Wisconsin's best butter running between the rows of lily white grains! Eats, eats, eats. Milk - finest there am - 9 cents a quart laid down f.o.b. back door. Buttermilk 10¢ a gallon, and such buttermilk! Four bits buys so many vegetables that one needs a piano box to keep 'em in. Even the humble penny here is a unit of currency and not something to cuss for getting in one's purse by accident. Rents are high but perhaps we may break even on food items--anyway it's exciting to find some things cheap!"-E.P.A.

Boy Scouts: (Apache Camp came to life about midnight of August 10, upon the arrival of 175 Boy Scouts from Mesa and Phoenix. This detachment had been preceded several days by 14 advance Scouts who made the camp ready for occupancy. The boys are accompanied by Captain Berry of the U. S. Army, loaned for the occasion, Dr. Palmer, Camp Physician, Scout Masters, truck drivers, and numerous camp attaches.--Tonto Bulletin)

The Prescott Roundup: "The horse roundup conducted by the stockmen on the Cherry and Bloody basin districts of the Prescott resulted in the removal of about 500 head of horses. 150 head of saddle and work horses were recovered. The State Sanitary Board cooperated in the removal of the wild horses to the extent of furnishing an inspector who gave bill of sale to all unbranded and unclaimed stock. To Ranger Mickelson belongs the credit for this work. Some of the horses were too wild to handle and the stockmen state that the 'Winchester Act' will be invoked to rid the range of the worthless stock."

Good Achievement: "Ranger Rogers put on his first guard April 15, and the second on May 9. The first one was laid off June 30, and the second stayed on until July 25. During this period they reported 47 smokes and helped fight 6 fires. In addition, they got out the timbers and built a 40-foot Lookout Tower and a 14x16 foot log cabin with a 10x14 foot porch, besides cutting down, lopping and burning brush on about 30 big pine trees around the Lookout. They also built one and half miles of telephone line and trail. Two-thirds of the time they were camped out, and all of the time they had to pack all water used three-quarters of a mile."

Nature the Quick Worker: Down on the Coronado, it is said that just one lone fire occurred on the Dragoon-Whetstone Division this season. It was caused by lightning but was extinguished by rain, which followed immediately, and erosion had already begun when the first man arrived. The report does not charge any elapsed time to Nature and the Coronado is to be complimented upon the splendid spirit of cooperation in fire suppression which appears to exist between that forest and the elements.

Naturally Treated Poles: When somebody on the Lincoln announced the discovery of a process for the natural pitching of yellow pine telephone poles on the stump, in place of the artificial method of application after the pole has been cut, by peeling off a three foot section before cutting, some claimed prior discovery and some signed with hope. It seemed too good to be true. Further investigation has disclosed some of the "ifs and ands." If the peeled tree is cut only a few months after peeling, only the outer three rings show pitch. If it is left a year, however, the whole cross section shows a good deal of pitch from the stump to six inches above the upper collar. The pitching is patchy but away ahead of no pitch at all. Cross sections have been cut from some of the poles experimented with on Ranger Wingo's district and will be polished in Dr. Long's section-shining machine. Final conclusions to date will be announced as soon as these sections have been carefully examined. If the process is successful, it will mean the saving of thousands of dollars in telephone maintenance work.

The Way Some Learn: John J. Lane, who impersonated a Forest Officer at Cuba and Socorro, New Mexico, in getting credit for about $75 worth of clothing and room and board for about two weeks, pleaded guilty to a charge of impersonating a Federal Officer and has been sentenced by Judge Neblett in the Federal District Court to serve thirty days in the county jail. Lane has already been in jail about four months awaiting trial which was, no doubt, taken into consideration in fixing the sentence.

Real Tedium: "He--Hi--Ho--Hum! Summertime! Fleas, Flies, Fires, Snakes, Tourists and Inspectors! Ain't life just one grand sweet song!"--Gila Monster.

All Year Use for Alidades: "'Two bits on even number.' 'Called.' 'Spin 'er' Attaboy!' 'Shoot it all on odd number.' 'Shoot' Spin 'er.' This is what Ranger Painter of the Gila heard when he rode up under a fire tower. Cowboys were playing roulette on the protractor with the alidade."--Gila Monster

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Sheepherder Accidentally Killed: Last Thursday at about 10:30 p. m., a wild and excited sheepherder arrived at the Bostetter Station and stated that his camp tender had accidentally shot himself with a shotgun. Rangers Stock and Poulton and Supervisor Garver collected all the first aid material at hand and left for the sheep camp immediately. It was a considerable distance from the station, however, and by the time they arrived the camp tender had expired. It appeared to have been the same old story of taking hold of the gun by the barrel and pulling it toward one's self over a log, and in this way pulling the trigger partially back and allowing it to fall. The body was hauled out of the timber the next morning, placed in a car and sent to Oakley for burial. The local officers received the thanks of the dead man's relatives and his employer.--Minidoka Hustler.

Korstian Leaves D-4: Mr. C. F. Korstian, who has been with us in District 4 since the summer of 1916 left on August 11 for a new assignment in the Service at the Appalachian Experiment Station, Asheville, N. C.

Korstian entered the Service on a temporary basis in 1909 and after completing his Forestry course was appointed to the position of Forest Assistant and assigned to the Coconino Forest in District 3. After 4 years in the Coconino in timber sale administrations and research work at the Fort Valley Experiment Station, he was assigned to D-4 to take charge of the research work in this District. Korstian put investigative work on the map in this District and is now leaving us to take up other lines of investigative work. We are sorry to see him go; we'll miss him, both officially and personally, and we wish him the largest measure of success in his new work.

DISTRICT 4 (Cont.)

Two More Scalps: Ranger Pelton recently brought in two unwary tourists whose appetite for fried chicken tempted them to try some of the grouse on the Big Lost River Game Preserve. They stated that they did not know that chicken hunting was prohibited on this Game Preserve, but Judge Kilgore imposed a fine of $100 and costs upon one of them--the one who was carrying the gun and the grouse when they met the Ranger. Costs amounted to $3.00 and since only two grouse were killed the average price would be $51.50 which, we believe, establishes a new high average for chickens.--The Lemhi Ranger.

Change in Name Being Considered: We have secured the assistance of the District Office in presenting recommendations to the Forester urging that the name Lemhi Forest be changed to Lost River Forest. It is agreed among those familiar with the situation that the present name is misleading to the public while the suggested name is widely known and is descriptive of the region.--Lemhi Ranger.

Many Predatory Animals Killed: Ranger Templeton reports that Mr. Goldman of the Biological Survey is camping at Bald Mt. inspecting the work of S. J. Harbison. During the month of August they trapped 25 coyotes, and one black and one brown bear. Mr. Harbison's record for his entire stay has been 45 coyotes, 2 bears, 60 porcupines, and a number of badgers. They state that the stomach contents of the coyotes caught show they are feeding on grouse and sheep.--Boise Accelerator.

To Cut Infested Yellow Pine: Authority was received from the Washington office to authorize the representatives of the Bureau of Entomology to mark the insect infested yellow pine on the Kaibab for cutting next spring. It is possible that active insect control operations will be started on the Kaibab next spring.

Who Says Publicity Does Not Pay? Forest officers saw the following spectacle recently. Sheepherder expectorated liberally in the palm of his hand--submerged his cigarette butt carefully and examined it for signs of life--then dropped it in the dust of the trail. What sheepherder would have done this in 1918?

DISTRICT 5 - CALIFORNIA DISTRICT

County Furnishes More Money: The county of Tuolumne has just given State Firewarden Holland authority to draw on them for $500 for fire fighting purposes. This is in addition to the $1,000 granted at the opening of the 1921 fire season.--Stanislaus.

Quick Action: A fire was reported by Nogback Lookout at the mouth of Bear Creek on Pitt River at 7:35 A.M. August 7. The report was received by the Dispatcher at Squaw Creek R. S. at 7:36 A. M. The Dispatcher called Forest Guard Kane at Round Mountain at 7:37 A.M., who left for the fire at 7:41 A. M. Guard Kane traveled two and one-half miles on horseback and had the fire under control at 8:39 A.M. This fire covered an area about six feet square, and was started by an unextinguished camp fire left by Scott Montgomery, who was arrested, convicted, and fined $50.00 at 5 P. M. of the same day. Quick action was the only thing that prevented this fire from becoming a large one.--Shasta.

Recreation Business Booming: District Office men who have visited different Forests have reported that the recreation business is booming everywhere. The Forests are full of campers, and people are renting summer home sites faster than the regular force can lay them out. Along the Lincoln Highway on the Eldorado practically everything accessible is already taken. The Stanislaus force can not find time to lay out enough lots to meet the demand, and everything on the lake shore at Strawberry Lake is already rented. The Sequoia laid out 36 lots on the Ice House Road and leased 35 of them the first week. Recreation is one business that never takes a slump, and from present indications our receipts from this source will increase at a rate of not less than ten to fifteen thousand dollars a year.

DISTRICT 5 (Cont.)

"Red Tape": The following incident on the Angeles prompts us to back up a little in our contention that there is more red tape in the ordinary department store than there is in the Government. On the Kellam fire Wong Hung, a Chinese cook of sixty summers, worked thirty hours with no sleep and with cigarettes as his principal nourishment. He put up the best kind of meals and in due time a check for $10.00 was sent to the address which he gave the timekeeper. While we might have known that Wong Hung knew nothing about the grazing regulations, he gave his address as San Bernardino, G-1, when as a matter of fact he lived at Gee Chong. Day before yesterday on account of a lost check Wong Hung spent $1.00 on a notary fee and 50¢ war tax so he could get his wages on an indemnity bond. Wong Hung is a cheerful Chinaman, but while we do not understand Chinese, we have a feeling that Wong has a proficient profane vocabulary. At least we think it is an outrage due as much to the Post Office Department as to the Forest Service.--S.W.A.

Further Study for Research: I thought that I had heard all the possible reasons for the cause of fires, but here is a new one which was repeated to me with all sincerity.

This party says "Fires that start in inaccessible places during the hot summer months are caused from boulders rolling down the steep hillsides and striking sparks by bumping against other boulders. These sparks fall into the dry leaf mold and immediately ignite. The reason for the boulders rolling is due to expansion caused by the heat of the sun. When the boulders expand, they crowd against others and being so tightly wedged, they are forced to roll off the mountain."--S.A.B.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Bonebrake's Injury: Deputy Supervisor Bonebrake of the Umpqua who suffered a very serious injury to one of his eyes while on a fire several weeks ago is still in a Portland hospital. The doctor reports that he is progressing satisfactorily.

Going Some for Cowmen: The cattlemen on the Saddle Creek Cattle and Horse Division of the Wallowa have agreed to refrain from smoking while on the range. This was a voluntary move on their part. Ranger Miller states that the clause relating to fire suppression in the grazing permits was the cause of their action. We have scrapped our fire signs with the slogan, "Keep fire in your pipe but out of the Forest."

"Ain't We Got Fun?" Ranger Lewis and Fireman McCallister of the Siskiyou while on their way to a fire on Rancherie Creek in Jake Winter's Tin Lizzie No. 348, had a thrilling experience on the Illinois River Road when Liz suddenly choked down on Shade Hill and backed over the grade, a large oak tree averting a 500-foot plunge into the River below. The wreck was boosted back on to the road and with a caved in rear end, broken wind shield and numerous rattles, 348 rambled on with the crew just a little while behind schedule.

It Couldn't Be Worked Twice: The Wallowa reports: "In a recent fire case before Justice White at Joseph, the defendant asked to be let off with a reprimand on account of the fire doing no damage and it being the first offence.

The Justice informed him that he had a case last year when he allowed his sympathies to be worked on and fined a man $25 for killing an elk when the fine was $250, and that he had a very narrow escape from having to pay the extra $225. He did not care to take any more such chances and collected the fine. The Mountain Sheep Ditch Company was the offender in this case. There was another small fire in the vicinity of the camp caused probably by a cigarette. The company has now discontinued the sale of "tailor-mades" in their commissary."

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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FIRE PREVENTION DAY

Proclamation by President Harding designating October 10, anniversary of the Chicago fire, as Fire Prevention Day.

"Whereas the United States suffers through destruction by fire an annual loss of life estimated at 15,000 human beings, most of them women and children; and

"Whereas, in the face of the world's dire need for American products, our fire losses increased during 1920 to over $500,000,000, and during the previous five-year period totaled over $1,416,875,000--buildings, foodstuffs and other created wealth needlessly wiped out of existence; and

"Whereas, in addition to the above, forest fires during the five years ended with 1920 further reduced our diminishing timber resources by a total of over $85,000,000, also threatening with aridity over 56,000,000 acres of hitherto productive woodland; and

"Whereas most of our fire losses are due to carelessness and ignorance and may be easily prevented by increased care and education on the part of citizens:

"Therefore, I, Warren G. Harding, President of the United States, do urge upon the governors of the various States to designate and set apart October 10, 1921--anniversary of the Chicago fire--as Fire Prevention day, with these principal objects in view, to wit:

"To request the citizens of their States to plan for that day and period, through pulpit, through open forum and through the schools, such instructive and educational exercises as shall impress the public mind with the calamitous effects and threatened economic disaster of such unnecessary fire waste;

"To urge, as an everyday duty of citizenship, individual and collective efforts in conserving our country's natural and created resources, and

"To promote systematic instruction in fire prevention in our schools, constant observance of the ordinary precautions that safeguard us from fires and an orderliness in home and community that we may overcome this lurking peril.

"Fire is a danger that never sleeps."

I have been waiting away a little for time to start an argument with the ~~[illegible]~~ in a recent issue of the Bulletin for pictures of women lookouts. I am assuming he wants said pictures for use in publications and that's where I think he is making his "big mistake." Not that the magazines won't use them, or that they will not make a fine page. No one can deny that the page in the Woman's Home Companion, picturing the now famous lookout on Devils Head, was attractive. Neither can one deny that it was widely read. One can not doubt either that it inspired in the hearts of many worthy ladies a desire to serve a great cause by emulation--or if one does doubt, I refer him to the D-1 files, or for a more emphatic statement, to the long suffering Person who writes to many, and interviews some of these ladies who subscribe to the magazine and aspire to be "Lookettes."

There is no doubt at all that thousands of women, and a few men, who never knew what forest fire lookouts were before now have a perfectly clear picture of them--"attractive rude cabins in the woods to live in, charming little glass houses to detect the fires from, and attractive ladies, dressed in dainty pink middies, et cetera, who are the lookouts." Presumably, whoever placed this page in the most widely-read women's magazine in America felt that he had made a home run in the game of publicity. The writer will agree with him in that, but contends, nevertheless, that he circled the bases backwards, and had better have whiffed out. If he had chartered the whole issue of the magazine and placed along with that page of all things beautiful a thousand other pictures of prospectors, homesteaders, college youths, lumber jacks, cowboys, etc., etc., with their pipes and their whiskers, and their tents where they live, taking them just as they come, we'd be glad to see the pages lightened by this one of a charming woman, whom we know is a good lookout. If he'd just put in, say, ninety-nine of them along with her, we'd be disposed to allow that much as a newsman's liberty. But when he gives to the readers of this great woman's magazine this single picture as their education for the present, at least, in the subject of Forest lookouts, should we call for an encore, or give him a few catcalls?

Maybe there are some other lookouts like this one. I don't know; but we all do know that they are, at most, mighty few; and we all know that in the northwest, where most of the lookouts are employed, it will be a long, long time before the hard boiled citizens who decorate the peaks in these times will give way to a corps of petite females. Does it do any one any good to tell the world differently? And doesn't it do a lot of harm? How is such publicity going to affect our chances for getting money so that roads can be brought nearer than 100 miles to some of our lookouts, and so we can get some sort of shelter for some of the men to live in? How does it affect the public's understanding of what the real Forest Service is? Is it not a mistake to seize on the unique or unusual as something that will serve to "get our name in the paper" when it is so misleading as this?

Let me ask again how much good has it done to have the hundreds of thousands of readers of the Woman's Home Companion believe that serving as lookout in the Forest Service is as shown in that wonderful page of half-tones?

This is not a single incident. There have been others--many others--where what was told was true enough, but where we left the reader in the position of those six blind men who went to see the elephant. You remember the story: One felt of his tail and said, "The elephant is like a rope"; one felt his ear and said, "He is like a fan"; one felt his side, and said, "He is like a wall," etc. Didn't they know just about as much about the elephant after the visit as the reader of the Woman's Home Companion learned about Forest Lookouts?

Playing the Game

By Paul D. Kelleter, Washington

The success of the Forest Service in the administration of the National Forests rests on getting the Forest users to play the game squarely. We promulgate rules and regulations that we consider necessary to put over the job and expect the users to come across. Because of our expectations when we put up the rules, it is up to us to reciprocate when rules are put up by the other fellow.

Playing the Game (Cont.)

A case of not playing the game arose a short time ago when a Forest Supervisor, whose offices are in a Federal Building, placed himself above the rules and regulations of the Treasury Department governing the occupancy of quarters in the Federal Building.

The Treasury Department has, after years of ripe experience laid down a number of simple rules about mutilation of the walls through pasting, nailing, and otherwise fastening maps, calendars, and pictures. Through periodic inspections effort is made to obtain observance of the rules, and wherever the inspecting officers find violations they call the fact to the attention of the occupants and request corrections.

The Supervisor in question was called on by the Inspector to remove various things from the wall. He demurred and served notice that he would refuse to remove the objectionable decorations until specifically instructed to do so by the Secretary of Agriculture. As a result of this obstinacy, the Secretary of the Treasury had to lay the case before the Secretary of Agriculture. Of course the request has now been complied with, but how much better it would have been had the Supervisor of his initiative conformed to the rules of the game!

Grazing to the Fore

By Will C. Barnes

The Branch of Grazing in the Washington office has steadily asserted that when the figures were finally computed on the number of stock actually grazed during the fiscal year 1921 they would show that we had grazed practically as many head of stock during that period as in 1920. The explanation, of course, is that inasmuch as the Forest Service was issuing permits for only about one-fourth of the number of stock in the eleven western range States it was natural to assume that where one permittee dropped out another would immediately apply for the vacated range, thus keeping up the total to about the normal number. The figures just compiled show this belief to have been well founded.

For the fiscal year 1921 we grazed a total of 2,132,763 head of cattle, horses, and swine, and 7,443,602 head of sheep and goats, or approximately 12,000 head more of cattle, horses, and swine, and 118,000 head more of sheep and goats than for the previous year.

Another interesting point which is disclosed by these figures is the fact that we had an increase in the number of cattle and horse permits of 259, and for sheep and goats of 342. This latter is perhaps the most surprising part of the whole situation. As far as an analysis can be made of the figures, it is evident that while a number of our larger sheep permittees have dropped out of the game their places have been taken by new men who have never before held permits for National Forest ranges and who have taken advantage of the low price of sheep to avail themselves of the benefits of a permit.

Another somewhat interesting disclosure is in connection with the payment of deferred grazing fees. The following table shows exactly the status of the fee question.

	Total paid to June 30, 1921	Total unpaid, by classes of stock, on July 1, 1921		Total unpaid on July 1,1921	Total receipts for fiscal year 1921 if all were paid
Dist.	Cattle & Sheep	Cattle	Sheep		
1	$ 69,610	$ 74,329	$ 53,072	$ 127,402	$ 197,013
2	57,132	250,520	126,602	377,120	434,252
3	75,167	412,910	105,499	518,409	593,576
4	101,335	268,736	312,066	580,803	682,138
5	87,320	94,938	53,745	148,683	236,003
6	51,362	111,341	94,582	205,924	257,287
7	9,685	5,509	154	5,664	15,349
Total:	$451,611	$1,218,283	$ 745,720	$1,964,005	$ 2,415,618

TOTAL RECEIPTS*

	Cattle & horses	Sheep & goats	Total
Fiscal year 1921 if all are paid	$1,543,394	$872,220	$2,415,618
Fiscal year 1920	1,549,390	877,638	2,427,028

(*Grazing trespass fees not included).

Grazing to the Fore (Cont.)

Up to June 30, 1921, we had received in grazing fees about $451,000, leaving a total of unpaid fees amounting to $1,964,000. These deferred fees are, under the terms of the act of Congress, not necessarily payable before the termination of November 30, 1921. The natural assumption was that very few of the permittees who had taken advantage of this postponement would make their payments until the very last moment. It is, therefore, very much of a surprise to pick up the statement sheet showing the National Forest receipts for the first two months of the fiscal year 1922 ending August 30, 1921, which shows that in spite of the opportunity to put off payment until December our permittees have voluntarily paid grazing fees amounting to over $329,000. If there is any inference to be drawn from these voluntary settlements of fees two or three months before they are legally due, it is that a good many of the western stockmen using National Forest ranges are not altogether banprupt, and are so situated financially that they can without apparent injury to their business interests settle their debts to the Government in advance of the time limit established--truly a very encouraging sign.

Another Popular Legend Shattered

Every once in a while some one with a bunch of cold facts and figures has to come along and take all the joy out of life. The latest is that the celebrated Mrs. O'Leary and her incendiary cow had nothing to do with the great Chicago fire, the semi-centennial of which will be observed on Fire Prevention Day, October 10. The fire department investigators state that on the day of the fire Mrs. O'Leary had a sore foot and went to bed at 8:30 p. m.

A broken lamp was found in the ruins of the barn the day after the fire. This gave rise to the report, now become a legend, that Mrs. O'Leary had gone to the barn in the evening, carrying a lamp, and that the cow, piqued at being disturbed, had kicked her mistress, who dropped the lamp, and the big doings were on.

There was a rumor at the time that neighbors had slipped into the barn to milk the cow for materials for an oyster stew or a milk punch, and another that a bunch of boys from the neighborhood were smoking in the barn.

Thus Mrs. O'Leary and her cow have joined the ranks of the empty beer bottles that set forest fires, and the lightning that never strikes twice in the same place.--H.

WASHINGTON NOTES

Colonel Greeley left Washington September 29 for a two weeks' inspection of the National Forests of Minnesota. Cooperation between the State and Federal Governments in fire prevention will also be looked into during the trip.

A Forest Ranger Examination is to be held on October 25. One special feature of this year's examination is that under "Education and Experience" a careful investigation will be made to ascertain the energy, industry, initiative, resourcefulness, tact, judgment, and personality of applicants. And, if it appears that any applicant does not possess these necessary qualities in the degree required in this position, the first subject "Practical Questions" of his examination will not be rated.

R. V. (Bull's-Eye Bob) Reynolds, Captain of the District of Columbia Civilian Rifle Team, has returned from the National Matches at Camp Perry sporting a new mustache and a string of medals. Reynolds entered in twelve matches, won money in seven, medals in four, and a prize in one. His record follows:

Western Cartridge Co. Match, 30 Cal.
10 shots at 900 yards. Score 27 bull's-eye. Tied for tenth place. Divided money and won medal on toss of coin.

Winchester Repeating Arms Co. Match, 30 Cal.
10 shots at 800 yards. Score 62 bull's-eye. Took eleventh place. High civilian score. Money.

Small-bore Wimbledon Cup Match, 22 Cal.
20 shots at 200 yards. Score 98. Third place, bronze medal, money, and English pigskin shooting bag.

Herrick Trophy Match, 30 Cal.
8 man team. Palma Course, 15 shots each at 800, 900, and 1,000 yards. High individual score of match 222 ex. possible 225. (Reynolds tried to beat the record, but failed. No one has ever made a perfect score in competition over the three courses of the Palma Match.) Team took seventh place. Reynolds share $1.50, cost of ammunition $3.57, out of pocket $2.07.

International Team Match, 22 Cal.
20 man team defending Lord Dewar's trophy against England, Canada, and Australia. 20 shots at 50 yards, 20 shots at 100 yards, per man. America beat England by 133 points and Canada about 300 points. Australia has not yet fired. Medals not given out. Reynolds low man on the team with score of 381. High man was 391. Walter Stokes, Champion of the World, only made 383.

Page S. Bunker, former Supervisor of the Flathead National Forest, Montana, has returned to forestry work in Texas, where he will have charge of the fire protection work under State Forester Siecke. After leaving the Service Bunker was City Forester of Fitchburg, Mass., and during the war served as a Major in the Ordnance Corps.--L.S.M.

Top O' the World, which appeared in the March 14 Bulletin, was reprinted in Outlook September 21, and illustrated with two pages of the Mt. Everest Expedition pictures.

FOREST PRODUCTS LABORATORY

What's in a Name? Apparently very much when the name is the right or wrong one attached to a particular specimen of wood. The Laboratory wood identification service continues as popular as ever, for during August, 774 specimens, including 203 foreign woods, were received from 28 different sources. The assortment included various things from mining timbers to battery separators and even a part of a fire door from a building in Boston. In the latter case an underwriters' bureau wanted to know the species in order to make a metal-covered wood door that would be more fire resistant than the one in question. It appears that the one used contained too much moisture and under the stress of a fire gave off moisture which expanded and ripped off the protective metal coating. Result--no longer a fire door.

Ice Cream Freezers Take Count: The box laboratory can now tell a few things about ice cream freezers that it did not know until recently. Seventeen big wooden freezers were recently dropped to destruction in order to find out the weak points in their constitution. Douglas fir, cypress, white and red cedar, and western and southern yellow pine were among the species of wood present, built up according to a number of standard methods used now in building freezers. The drop test finally put even the best of them down for the regulation count. Modifications in construction will be suggested that it is believed will enable the big tubs to stand a more severe beating.

They Literally Fly to Our Boxing and Crating Course: Seventeen men are coming to the boxing and crating course which commences September 26, and one of them is coming in an airplane. He is Lieutenant T. R. Turpin of the Aviation Supply Department, stationed at Fairfield, Ohio. Lieutenant Turpin has requested the laboratory to find a suitable landing field for him. Among the Lieutenant's classmates will be two other army officers and two Canadians.

DISTRICT 1 - NORTHERN DISTRICT

New Cedar Industry: There was recently established at Sandpoint, Idaho, a plant which produces material for chicken nests manufactured from cedar bark. It is claimed that nests made of this material will keep out vermin. The bark is purchased locally in cord lots and shredded into long fibers. The industry at present employs only four men, but claims orders far in advance of the supply. The cedar bark is purchased at $10.00 per cord, delivered at the mill, put up in bundles of approximately 60 pounds. The finished product is sold in small bales, weighing 5 pounds each, which sell for a dollar and contain enough material for six nests.

Law Enforcement: Since the beginning of the fire season there have been sixty prosecutions in District One for violation of the State and Federal fire laws, and in about 90 per cent of the cases, convictions have been obtained. A majority of the offenders have pleaded guilty to the charges brought against them, paid their fines willingly, and promised to be more careful in the future.

Non-Smoking Pledge: The following pledge was taken by all smokers of the regular forest organization, 28 members of the protective organization, and 18 members of the improvement and emergency crews of the Cabinet Forest:

"Considering the great danger of setting fires unconsciously through carelessness in smoking in the woods, and the great losses in timber and the ensuing cost of fighting such fires, I, the undersigned employee of the United States Department of Agriculture, Forest Service, Cabinet National Forest, do hereby agree to refrain from smoking at all times while away from my camp, during any period of employment, or until the protective organization on the Cabinet Forest shall be declared unnecessary."

Proposed Air-Seasoning Study: Mr. Rolf Thelen, in charge of Timber Physics at the Madison Laboratory, arrived in this District on September 16, and in company with Mr. Fullaway of the local Products office, left for the field on September 18, to spend about a week in the North Idaho region, interviewing lumbermen and getting in touch with the Air-Seasoning needs of the industries.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

The Monarch Pass Road was officially opened Monday, September 19. District Forester Peck and local Forest officers, representatives of the Bureau of Public Roads, and about 700 citizens of Salida and the surrounding country were present. Short speeches were given and a picnic lunch enjoyed. All declared this one of the finest roads in the State both as to location and grade, which in no case is over 7 per cent.

The Departmental Exhibit, consisting of displays from the Biological Survey, the Bureau of Public Roads and the Forest Service at the State Fair at Douglas, Wyoming, was visited by approximately 10,000 people, and the same exhibit is being installed this week at the Colorado State Fair in Pueblo. As usual, the Service put on an exhibit at the Minnesota State Fair at St. Paul in conjunction with St. Louis county. It was an attractive display of scenic features of the Superior Forest and received much favorable comment.

Disastrous Fires of Minnesota have brought out more than the usual amount of comment in the big dailies of that State; Governor Preus taking special interest in them and directing in person the fire fighting. It now appears that a publicity campaign against fires and for forestry production in Minnesota may be put on this winter.

The Duluth & Iron Range Railroad is preparing a car exhibiting especially the recreation features of the Superior National Forest. This car is to be shown throughout the Middle West during the early spring of 1922.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

U. S. Attorney Lectures Boys: J. W. Schaefer and F. Landers, young boys of Boise, who left an unextinguished camp fire outside the Boise National Forest, but within the Fallon Fire Law District, were taken before Probate Judge Miller by Forest Supervisor Grandjean and given a strong lecture on the necessity of taking care of camp fires. The same boys also left a camp fire within the Boise National Forest and were taken before U. S. Attorney McClear and given another lecture which we hope will be a good lesson.--Boise Accelerator.

Heartless Forest Officers: According to Ranger Rohwer, Deputy Supervisor Mink, and Guard Lewis, it pays to get out early on Sunday mornings. While riding near the Lutts ranch in Ruby Valley, they saw a man at a distance of about one-half mile, poaching in the sage brush for sage hens. It was observed that the pump gun was in use, and the sage hens were flying up all around, with the result that the hunter made one (1) lucky shot and brought down one lone sage hen OUT OF SEASON. They just moped around on their horses in the field, and before the hunter tumbled that it was not some of the ranch men, they were upon him, and asked him what kind of luck he was having. He stated not very good, but he had captured one sage hen, which was in evidence. He was arrested and taken to the Lutts ranch, where Mr. Geo. Smith went his bond for $50.00, and the hunter is to appear Saturday at 3 P. M. and "tell it to the Judge."--Humboldt Hummer.

Visitors Expected: D-4 is certainly honored with visitors from the Washington office. On October 1 Assistant Forester Headley will arrive at the Grand Canyon for a three weeks' visit. On the same date Forest Inspector Preston arrives in Ogden for a three weeks' inspection. On about the same date Chief Engineer Norcross is expected and Major Kelley is expected to arrive from the North. Inspector Rachford is now in the District. We are, of course, glad to see them come and hope to get down to business after their visit.

Road-Opening Celebration: Mr. Martin returned recently from a three days' celebration of the completion of the Ephraim-Orangeville road. He states that there were probably 3,000 people present. A meeting was held at an elevation of 10,000 feet on what is called Horseshoe Flat, which is at the top of the mountain. The meeting consisted of talks by various parties, among whom were the Governor of Utah and J. P. Martin.

Ranger Bill Says:

Perspiration not inspiration has been the makin' of most Forest officers.

The harvest season on reports is drawin' nigh.

Don't kid yourself into believin' that a feller can't "sweat blood" at an office desk as well as on a fire line.

DISTRICT 5 - CALIFORNIA DISTRICT

Frying pan Supplants Hairpin: A woman is popularly supposed to be able to do almost anything with a hairpin, but here is an instance where she did it with a frying pan. A fire started near the Lake of the Woods, on the Eldorado Forest, presumably from a camp fire left by two U. of C. hikers. Mrs. M. N. Burroughs, who was camping in the vicinity, "saved practically the entire scenic value of the lake by scooping out a good fire trail with only a frying pan," according to the account given by Lookout-Fireman M. N. Waterhouse. Hats off to Mrs. B.!

Wild Hog! The California has an established reputation as a hunter's paradise when it comes to deer, but we are now beginning to compete with the European royal and ex-royal forests in wild boar and wild hog sport. On August 2, Ike Mason of Willows, camped at Linger Longer in the Stonyford District, shot a hog belonging to Forest Patrolman J. M. Adams. Mason told Adams he had thought the hog was a wild one.--Moral: If you can't get a buck, try for a hog, cow or possibly a sheep.

DISTRICT 5 (Cont.)

Another Prospective Municipal Camp: On September 17, 18 and 19, a committee of citizens appointed by the Mayor of Stockton will look over possible municipal camp ground sites on the Big Tree road on the Stanislaus and on the Jackson road on the Eldorado. The committee has sent advance notice of their visit in order that Forest Officers may be on hand to show them what we have to offer. It is known that the city of Berkeley is also looking for a site for a municipal camp, and is seeking a location on the Stanislaus, Eldorado, Tahoe or Plumas Forest.

Truck Serves as Ambulance: The F. S. Dodge truck recently performed service as an ambulance. J. C. Hughes of Potter Valley, one of our grazing permittees, had been thrown from his wagon by a runaway team and had been unconscious for two days following the accident when Forest Supervisor Coffman happened to visit Potter Valley on a fire trespass case. Mr. Hughes' physician wished him taken to Ukiah for X-ray examination and hospital treatment. The Dodge was converted into an ambulance and Coffman drove the patient, who was accompanied by a nurse and his son, to Ukiah. In addition to his other injuries, Mr. Hughes' shoulder blade was broken, and every effort was made to prevent any jarring of the patient. On account of the bad condition of the road, owing to the heavy trucking between Ukiah and the Gravelly Valley dam, it took two hours to make the trip of 17 miles.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Air Patrol: Due to a mix-up on the gas situation, the Oregon Forest Patrol was "on the ground" from July 28 to August 21. It started again the latter part of August, and was discontinued on September 10. From present indications there will be no Army planes assigned to Forest Patrol in 1922, Secretary of War Weeks having informed Secretary Wallace that due to reduced Army appropriations this cooperation could not be continued another year.

Without Fear or Favor: The following case is reported: Burt Bonar left a camp fire burning on the Chelan. The guard discovered it and found a piece of paper near the fire with Bonar's name on it. He reported the case to Ranger James McKenzie (brother-in-law to Burt Bonar) who arrested him and took him to the Judge. Fire law enforcement knows neither friends, relatives nor enemies.

One Girl-Caused Fire: Two revivalists and two members of the choir from a camp meeting at Enterprise took a trip into the hills near Enterprise in the Wallowa country. The ministers came in the next morning stating that the girls were lost and that they had been looking for them all night. The girls came in about one-half hour later. A fire had been discovered in the meantime on the hill where they spent the night, which proved to be from a fire they had set. Result: One Ranger who is not at all popular with certain fair damsels and two fines paid by the ladies.

Close-Up of Taft: Ranger Harper of the Wallowa writes in: "The grazing men who have been making a tour of the eastern Oregon Forests the past 10 days made a flying trip over this district on August 6, and were accompanied by the County Agent and several of the stockmen of the county. Upon arriving at the Billy Meadows R. S., they took a half-mile walk in search of some of the elk, and were favored by getting a close-up view of Taft, the king elk of the Blue Mt. Range."

DISTRICT 7 - EASTERN DISTRICT

Dynamiters Caught: A few weeks ago the deputy sheriff of Caldwell County, N.C., caught four men and a boy dynamiting streams on Government land in the Grandfather Mountain division of the Pisgah. They had shot 11 pools before being apprehended and the boy was carrying a sack full of bass and trout. The gang was brought to trial in Lenoir, N. C., at the last term of the Superior Court, and speedily convicted. The Judge fined each of them $100 and gave them 30 days in jail. This sentence was all that the State law permitted. The Judge lectured the men and remarked that he was sorry he could not give them two years on the chain gang.

Service Bulletin
U. S. FOREST SERVICE
(Contents Confidential)

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SLASH DISPOSAL IN SOUTHERN PINE FORESTS

By R. D. Forbes, Southern Forest Experiment Station

What is believed to be the first systematic study of brush disposal methods ever made in the pine types of the South is now under way at Urania, La. Henry E. Hardtner, president of the Urania Lumber Co., who as a member of the Louisiana legislature in 1910 was sponsor for nine-tenths of the forestry laws of his State, and who has for ten years been putting forestry principles into effect on the lands of his company in central Louisiana, is again taking the lead in forest experimentation, and has asked the Service to cooperate with him in brush disposal work. This offer fits right into the minimum silvicultural requirements study for the South, which the Station staff is conducting with the cooperation of Austin Cary, Logging Engineer. Accordingly Forest Examiner Lenthall Wyman and the writer spent the past two weeks at Urania, selecting experimental areas and laying out a series of plots at the Urania front. In this work we had the advice and cooperation of V. H. Sonderegger, Superintendent of Forestry for the Louisiana Department of Conservation, who has assigned one of his men to help in the work.

Three general methods of treating the slash will be followed. The forest type is loblolly pine chiefly, both "hill" and "hammock" land. Mr. Hardtner is very anxious to discover at what cost he can obtain fuel for his skidder, loader, and dummy engines from the tops, and on one plot is having the limb wood to three or four inches cut into two-foot lengths for this purpose. The wood is made right on the ground, and the small branches are piled for burning. So far progress is slow, and the indications are that costs under this method will be excessive. A second plot will be devoted to lopping of tops, followed by broadcast burning. The theory underlying this procedure is that advance reproduction in southern pine woods is generally scanty, subject to considerable injury in the logging as ordinarily conducted, and under present conditions almost certainly doomed over wide areas if brush is not disposed of and slash fires thereby prevented; brush disposal can not be expected to do more than preserve seed trees against fire, letting the advance reproduction take care of itself. A third plot will be a control plot, the tops being left to rot as they fall, special efforts, of course, being made to keep fires out of them. The entire series of plots will be repeated on land logged without steam skidders, the first series being steam skidded. As a side issue, the effect of logging with steam skidders will be observed. Nearly all of the plots were laid out in advance of any felling, and a complete stand table down to a small diameter was made for each. As some time will have to elapse before the brush will be dry enough to burn, the work will continue intermittently for a month or six weeks.

Gently, Brother, Gently

By C. W. Boyce, Washington

Why is it that practically everyone interested in forestry, whether connected with the Forest Service or not, takes particular delight in laying out the Lumber Industry? It is too true, of course, that the Lumber Industry is directly responsible for the waste of millions of acres of our once valuable forest land. Furthermore, logging to-day is carried on under wasteful and wrecking conditions. But is the Lumber Industry to blame? Let's be honest. Are not the general economic conditions under which the industry is being carried on a little bit guilty? Aren't the people of this glorious American republic howling about lumber prices and all of the conditions that make them, and are not these same people through their howling driving the Lumber Industry toward more sinful ways? Can these conditions be met by other than economic measures?

The modern school teacher knows that if she can get the cooperation of her pupils she can do more with them than by vaguely bawling them out every little while. Why can not we,--people who are vitally interested in forestry, trained in the technical ways of forestry, claiming that we see the underlying economic conditions, and professing a knowledge of costs and profits,--cooperate with the Lumber Industry in surmounting the economic giants of destruction and incomplete utilization? By so doing, may we not help them, lead them perhaps, to a firm conviction and general acceptance of forestry, practical under revised and developed conditions wherein the cold commercial facts have been duly considered. Would not this be more effective than raking them over the coals and holding up to the world all of their faults?

Let us amplify the respect gained by the establishment of the Forest Products Laboratory for purely cooperative and helpful purposes. Let us think cooperation, and above all act it. The foresters of the United States may be leaders through cooperation in putting every part of every tree to its greatest use, or pushers behind a cloak of legislative regulations. Isn't leading the more dignified and certain way?

Making Ranger Stations Attractive

By Paul D. Kelleter, Washington, D. C.

Isaac Newton made a name for himself just because he sat under an apple tree and watched the falling apples. Opportunities for fame will soon be in store for Forest officers. After years of expectancy the Forest Service finds a way for the beautification of Ranger Station grounds by the planting of fruit and shade trees, grape vines, rosebushes, and similar shrubbery. All this is possible because the Solicitor has advised the Forester that the necessary authority exists under the terms of the appropriation act.

It was indicated to the Solicitor that the Forest Service provided for most Rangers living accommodations, but that the full value of such buildings was not obtained unless the setting was more attractive. A little landscaping and the planting of a few trees will help and give a distinction to the whole Ranger Station grounds. Full benefit of such improvements is obtained only after the course of years, and so it is not reasonable to expect the occupant for the time being to spend his personal funds for something from which he may not derive a benefit. As it is, each Ranger puts considerable of his own energy and funds in Ranger Station dwellings during his period of occupancy.

More About Fires in the Northeast

By Louis S. Murphy, Washington

New Hampshire this time, one of the softwood group. Strangely enough, the season in this State has been subnormal as to number of fires, but subnormal in that respect only. Fires this year have called for the hardest fighting on record. Notwithstanding that, however, the majority of the fires have been held down to relatively small acreages, due to prompt discovery and quick, effective action. The so-called Belmont fire, which occurred in the central part of the State in late June, is a good illustration. The fire was started by lumber haulers in a mixed pine and hardwood slashing. Besides the slash, More About Fires in the Northeast (Cont.)

there were 75 M feet of pine lumber, a goodly part of it 3-inch re-saw and sash and door stock from 3-foot butt cuts worth $40 or more a thousand, and some 50 or more cords of firewood which had yet to be hauled off, besides the sawdust and other refuse from two portable mill sets. The cutting area covered about 100 acres altogether, fronting on an improved gravel road 60 feet wide, and extending back to a woods road and flanked by an area of sapling pine growth extending one-half mile to a small settlement.

The fire started in the northwest corner of the cut-over area on the back road, sweeping across the north half, jumping the 60-foot gravel road, and continuing about one-fourth mile beyond to the shores of a small pond. Despite the fierceness of the fire, it was successfully fought and held at the edge of the young growth with the help of a power pump drawing water from the pond. The south half of the cut-over area, including one of the mill sets, was also saved by the pump. Over 100 men were engaged in fighting the fire the first day, while from 5 to 8 men were kept busy for nearly a week, digging the fire out of the duff round the edges where the hose could not reach. The fire burned completely through to mineral soil, consuming 3 to 5 inches or more of duff and leaving the roots and stumps entirely exposed on top of the ground. Large stones embedded in the duff and also a stone wall near the north side were shattered and split by the heat as though they had been subjected to intense shell fire.

Already, the middle of September, the ferns show patches of green on this blackened area. Another year, and this "horrible example" of carelessness with fire will be largely obliterated to the casual observer, so quickly do the lands in this country reclothe themselves with pioneer green growth.

FOREST PRODUCTS LABORATORY

Concerning Tree Names: Not only are we asked to identify queer woods from the various parts of the earth, but sometimes asked to translate local names of woods into more scientific terms. A correspondent in Saignon, China, recently asked us to tell him from what trees these woods come: Pi-e-Hah, Chi-Tiel, and Sra-Lao. In this case the laboratory backed down gracefully, for even our comprehensive file of foreign local tree names failed to locate these three unbranded strays. Incidentally, it's fortunate our field men do not have jaw breakers like these to contend with. Oliver, the Ranger's faithful office companion, might even rebel and throw a type or two.

Now It's Cash Registers(*): Eleven drops in the big box testing drum served to demonstrate a number of points where cash registers can be better packed. The National Cash Register Company of Dayton sent a man to the current box course and he brought with him a half dozen samples of their well known product boxed according to their regular practice. The machines were beautiful examples of the latest types of registers put out by the company and ranged in value from $300 to $2,500. The $300 machine was used for the demonstration even though the company was ready to put them all through the smashing tests. According to the box experts, the registers were wonderfully packed, but even at that important improvements were suggested. Further tests will be made after the changes are made.

Horseshoes: Daily after the Lab. whistle turns loose our two-hundred-twenty odd folks, certain male members are seen sneaking back of the several buildings and going to it with the curved irons. You've guessed it--a horseshoe tournament! The champion has not yet been determined, but by a process of elimination we expect him to shortly appear--if the supply of shoes holds out. The other day one of the ex-westerners in the game allowed he knew where he could get some good hefty No. 1 shoes, because when he held down the Deer Creek Ranger District on the M_______ Forest he'd hung 'em on the station barn rafters himself as he used to take them off old Dan. So the skies are not so dark after all.

Gently, Brother, Gently

By G. W. Boyce, Washington

Lake Fire Season in [illegible] mmer, which kept down fires to very small proportions, September has turned off very dry and during the last week in the month fires have broken out in several places which, in ordinary times, are considered pretty safe. At present there is a fire of Class C proportions on the Gunnison on which 50 men are employed; but, fortunately, it has been confined to an area supporting only oak brush and aspen. The Black Hills has been having considerable difficulty with several fires; the latest report indicates that they are under control.

On the Colorado, a fire requiring the services of about 60 men broke out on private land along the Moffat Road, but is being kept off the National Forest.

The Medicine Bow is facing critical conditions and has put on extra patrol.

State Forester W. J. Morrill was a visitor in the District Office this week and reports an evident increasing interest in forestry by the growing enrollment in the forestry class at the State Agricultural College, which is now the largest in the history of the school.

New Salt Regulations on Montezuma: Because of a difficulty which has been had in getting G-5 and G-7 permittees to put salt on the range, Supervisor Hoffman of the Montezuma has put into effect a new policy for the next grazing season. The policy will require G-7 permittees to pay the Secretary of the local stock association their salt fees, and permit will not be issued until showing is made that these fees have been paid. At the same time, the Secretary of the Association will require salt fees on regulation G-5 stock. The salt will be placed on the range by men employed by the Association and will work under the direction of the Ranger of the district concerned.

Poor Harvest of Forest Tree Seed: This is a poor year for gathering forest tree seed. Reports from Supervisors throughout the District indicate almost a total failure of the Western yellow pine seed crop, and with only scattering sections where fair crops of Douglas fir and Engelmann spruce are to be found. In the Lake States, the white pine crop is a failure. A small crop of Norway pine is reported from isolated localities and as usual there is an abundant crop of jack pine. There is also an abundant crop of pinon pine on the eastern slope in the southern part of Colorado. Small crops of blue spruce and white fir have been reported.

Ranger Bill Says:

I'd like to trade a wound stripe for a job, says Lumberjack Sawyer to me t'other day.

The cost of livin' may be comin' down, but it aint got to my level yet.

I kinda wonder sometimes how many burned trees is equal to the life of one airplane patrolman.

DISTRICT 3 -- SOUTHWESTERN DISTRICT

A New Species: Every one has heard of cowboy artists, but now comes the "Ranger Artist." Among the artists who have pictures at the Eighth Annual Exhibit at the Museum of New Mexico at Santa Fe is Ranger W. R. Murk of the Carson. He has two pictures entitled "The Ranger" and "On the Summit" on exhibition. Murk came to us last winter via the sign shop. No wonder our trail signs are artistic.

Another Old-Timer Leaves Us: Supervisor R. J. Selkirk of the Apache has submitted his resignation effective December 31. Selkirk is one of the old timers of District 3, and leaves behind him a long record of faithful service in all grades from Ranger to Supervisor. He began duty on the old "Santa Rita Forest Reserve" in 1906, and has since served on the Coronado, Coconino, and Apache. District 3 is sorry to lose him and wishes him well in his new field. It is understood that he will go into ranching in the Salt River Valley near Phoenix.

Handy Information: The Sitg[illegible] sts, "If you need a little pine tar for any purpose and [illegible] able, try this." Then it tells how one can take a can with a tight top, such as a small Karo syrup pail, cut several radial slits in the lid, press the center of the lid down so as to form a sort of a funnel and use this as a receptacle in the ground with the top of the can level with the ground surface. The next step is to provide another can, open on one end. Fill it with finely split pieces of pitchy wood stood in vertically, then set the second can, inverted, on the top of the first one. Seal the joint between the cans with sufficient dirt to prevent anything from getting into either can, make a slow steady fire about and above the whole arrangement and "be patient, and keep a lookout for the prohibition officer or you may have to spoil your tar to prove that it aint."

After the Deluge: We are confidently informed that the rainy season is now over and Forest Officers can venture out without slickers and a supply of dry firewood in their inside pockets and can begin to figure up what has been washed away. We already know of several trails and roads that have disappeared and from the difficulty in getting anyone on the telephone we are wondering if some of the wire hasn't floated off. It is gratifying, however, to know that despite the extraordinary rains no severe floods have occurred in streams having their headwaters on the Santa Fe Forest. It is a testimonial to forest cover and properly regulated grazing. The Santa Fe is blessed with the best cover in the southwest and that is not all--we are going to keep it.

DISTRICT 4 -- INTERMOUNTAIN DISTRICT

Fire Case Settled: Assistant to the Solicitor French returned from Downey, Idaho, where yesterday a fire trespass was settled by defendants, six in number, tendering $100.00 in lieu of standing trial.

The fire occurred on August 13th while the party composed of six young men of Downey, their sweethearts, and a chaperon, were camped in the vicinity of Custer, on the Challis National Forest. In their haste they left their camp fires unextinguished.

Mr. Laing and Guard Ellis, together with State Game Warden McGowan, who shortly afterward discovered the fires, were able by telephoning down the valley to get the numbers of the party's automobiles. Thus they were traced to Downey.

It may not be inappropriate to relate an incident indirectly connected with the case. All of Downey, of course, knew that the Forest Officers were in town, for the proprietress of the hotel had been chaperon. While the matter was being discussed in the evening an uncle of one of the young men defendants went to the latter's sweetheart and stated that all had paid up but "her intended," who could not raise the money, $50.00 being required. She promptly turned over this amount after having effected a loan from an aunt.

Water Right Controversy: A limestone dike crossing Ashley Creek and several of the smaller streams a short distance above the Forest boundary threatens to be the rock upon which the water users of this section will split. It has never been determined what becomes of the waters of the higher regions when they reach the dike and the "sinks" of that locality. A special use permit has been issued to a company having the ambitious plan of taking the water through a tunnel to another watershed for irrigation of land not now used because of lack of water. Older settlers and water users of the valley claim that the water in question flows underground and ultimately augments the supply for their irrigation ditches. The State Engineer has been called upon to settle the dispute.--Ashley News Letter.

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Forest Service: "We need ten new cruisers on the California."

Budget Bureau: "Sorry, but none available until after the 'Disarmament' Conference."

Gently, Brother, Ger

Predatory Animals Killed: The report of Luther J. Goldman, Chief of the Biological Survey of Idaho, for the fiscal year 1921, shows that the following numbers of predatory animals were killed by hunters of the Survey last year:

Wolves	25
Coyotes	1478
Bobcats	79
	1582

Eight wolves have been killed by private parties during the present season in Fall Creek Basin on the north end of this Forest. The Snake River Cattlemen's Association, in whose range allotment the Fall Creek Basin lies, offers a bounty of $50.00 for each wolf killed in that territory.--Caribou Notes.

DISTRICT 5 - CALIFORNIA DISTRICT

Do Bears Always Run Away?--A few days ago as Lester Baker of Henderson was coming down Pitt River from Hagen Flat to Will Baker's, he met a brown bear in the trail. Now, Lester is quite a practical joker, so he thought what fun it would be to scare the bear over the bank and make him swim the river. He gave a big "booh" and rushed at the bear. Now the bear seemed to have been reasoning along the same line, for he gave another "booh" and started for Lester, who concluded to go to the house and bring his brother Will down to see the fun. To think was to act, and he started in such a hurry that he didn't take time to pull down his hat, which seemed to hang in the air some four or five inches above his head. Lester has quite a reputation as a sprinter, having several times made one hundred yards in eleven seconds, but he is convinced he made the first one hundred yards then and there in three seconds, and increased his speed every consecutive hundred until he reached the house, where he arrived twenty minutes ahead of his breath. ("Dad" Lofton, Lookout--Shasta).

Green Lookout's First Year on Duty:

Lookout: "A smoke in a patch of timber 20 miles square reads 0 - Due north."

Ranger: "Give me some landmark, or something to go by."

Lookout: "No landmarks--all level timber country. But smoke is close to the largest forked yellow pine in the patch."

Ranger: "I might have to ride a week to find the tree."

Lookout: "Well, it's all in your favor. Should you ride that long you're bound to find it as the fire will be getting bigger all that time too."--Lassen.

Angeles in the Lead: Last year there was some controversy between the Districts as to which Forest had the greatest amount of special use business, but the Angeles easily carried off the first prize. That this was no "fluke" win is evidenced by the fact that on September 1 the Angeles had on hand 73 unapproved applications for special use permits, mainly summer homes. Several recent severe fires on the Angeles undoubtedly is the reason that the issuance of permits was somewhat delayed, but this is more new business than most Forests have in an entire year.

Musings of a Lookout: We may justly exult over the long list of championships held by Americans in sports, science and practical application--in fact, in all fields of endeavor. We are either in the lead or a close second. Scoring first in fires, though, is hardly a thing to be proud of.

From our observation point, we have noticed the wanton, wilful destruction by fire carried on by our neighbors, the Mexicans. During this present season so far, their record stands at eight in one day. But on the 6th inst., I recorded nine for us.

We may derive some consolation from the fact that we surpass them in rapid suppression.

We have at various times come across the announcement of a record having been established by some one--some startling, some unique. We wish to claim a record for ourselves. On the 17th inst. we had 10 smokes at one time in sight.

3 heliographs calling at the same time, and one telephone ringing. Incidentally, we invented a new dance step.--Greene-Lookout-Cleveland.

A "Knight of the Road": Rather an interesting State fire case has come to our notice. A few days ago a "Knight of the Road," Ed Gibbons, was wandering around Chinese Camp. He stopped at Venturini's shop to purchase bread and at Dr. Stratton's to borrow a can in which to boil his evening coffee. He then took himself to a nearby grass field, where he proceeded to build his camp fire, not bothering about the intelligent precaution of clearing a fire space. While the coffee was brewing the Knight had a sudden fit of temper (we shouldn't be a bit surprised if just about here the fire started to get the better of Mr. Hobo), kicked over his improvised stove and decided he'd go on down the road. Mr. Holland was at another fire and did not get the information from the Strattons regarding the spreading of the hobo's fire until 9 P. M., which was too late to do any man hunting. The next morning State L. E. Officer MacIntyre procured a warrant from Judge Opie of Jamestown and together with Dr. Stratton's son started to locate the offender. They found him in Groveland (about 14 miles away) working for the Hetch Hetchy Company. They took the man back to Jamestown, where the Judge fined him 100 days and $50.00, saying that he would suspend the 100-day sentence and let Gibbons work out the $50.00 fine, when Gibbons stated that if he ever got out of the court room he would never see him again, whereupon the Judge remarked, "All right, young man--thirty days in jail beginning at once."--Stanislaus.

DISTRICT 6 - NORTHERN PACIFIC DISTRICT

Do You Take Photos? Many employees of the Forest Service, equipped with official or privately-owned cameras, take many pictures every year on official or privately-owned films and on official time. Many of these pictures are excellent for illustrating Forest Service activities or National Forest scenery. I have at times been able to borrow the films and secure prints, usually at my own expense. I have endeavored to persuade various employees to send in good negatives of Forest Service activities or scenery to Washington, to become a part of the Forest Service collection so that prints might always be obtained without difficulty. It seems to me too frequent the authors of films of this kind retain the films in their private possession to later become lost or destroyed and when duplicate prints are wanted, it is well-nigh impossible to secure them.

It seems to me that every picture taken on Government time should become the property of the United States and turned into the Photographer's office of the Forest Service for the Service collection if desired, and, if necessary to secure this result, less freedom in purchasing films or paying for development and printing should be given than is now the case.--N. F. Macduff.

Easy, Easy! The Wenatchee evidently doesn't wear suspenders! "The people are so careful with fires this summer that we hardly know what to do. A check of over a thousand camp fires shows that all but three were completely extinguished before they were left and the other three were so near it that it was not necessary to put them out. Every one going to places that have not been designated as public camp sites have applied for a fire permit. The permit system is sure a good thing. The public in general is doing everything possible to help us in keeping fires from starting."

New Forest Camps: The Wenatchee reports: "The Kachess road is nearly completed. This road will open up one of the finest camping sites in the State, also a summer home site. A dozen or so summer home tracts will be surveyed out near the head of Kachess Lake.

The tourist travel over the Sunset Highway is lighter than usual this year, but the number of people using the camp grounds is considerable more than last year. To date about 2,000 people have registered at Rocky Run. In all probability there will be at least 10,000 people using this ground this year.

DISTRICT 7 - EASTERN DISTRICT

White Pine Doing Well: A recent inspection of the area planted under the administrative use granted to a nurseryman last spring, shows that in spite of late planting and hardwood sprout competition, there are not more than 3 per cent of the white pines dead.

Four thousand seedlings were set out, about one-half of the stock being one-year transplants from the nursery, and one-half wild stock from surrounding woodland. The greater death rate is found in the latter. The area covers about 10 acres. It may be stated that the nurseryman referred to agreed to plant one white pine in return for taking out four rhododendrons and azaleas 12 to 17 inches high.

The Fishing Season closed on the Pisgah Game Preserve on August 31. The total of permits sold amounted to approximately $1,250. This is an increase of $400 over the season of 1920. According to the statements of some who went on the streams the last day, the trout evidently thought the 31st of August was in reality September 1.

Ranger Fink and Guard Edmundson of the Pisgah have been devoting part of their time recently to obtaining the signatures of land owners adjoining the Game Preserve to an agreement wherein it is stipulated that said owners will post their own lands against hunting, will give information to Forest officers of illegal hunting which comes to their notice, and will willingly serve as witnesses in such cases. The idea is that we can manage better inside if land owners outside will help us. We do not look for big results from our efforts, yet the creation of a favorable sentiment is worth while.

DISTRICT 8 - ALASKA DISTRICT

Establishing a Contact: Clerk L. C. Pratt has been doing excellent work in supplying the press in the vicinity of the Chugach with live Forest Service news. He has a little news circuit established--Cordova, Valdez, Seward and Anchorage--to which he furnishes press items regularly.

Assistant District Forester Merritt states that he likes Juneau and what he has seen of Alaska and its people. He was one of the speakers at the banquet in Juneau given in honor of the new Governor, Scott Bone. Merritt reported that houses were not very plentiful in Juneau. He expected to leave shortly for an inspection of the Chugach.

Mulder to New Work in Alaska: Assistant Engineer J. C. Mulder has accepted a position with the Federal Water Power Commission in D-8. He was assigned to Alaska on August 1 and his duties will consist in making reports and investigations on water power projects in that territory. Mr. Mulder has been on minor forest road and trail work in D-3 since May, 1919. Prior to that date he was with the Geological Survey and with the Bureau of Public Lands and Public Works of the Philippines serving for 14 years in the Islands.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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AS TO THE SERVICE UNIFORM

By Colonel W. B. Greeley

After seeing the Service uniform cut to pieces, remade, adorned, and ironed flat in various issues of the Bulletin, I believe that it is "up" to the southeast corner room on the seventh floor of the Atlantic Building to give utterance. No one can say that the results of a universal wearing of the uniform would be 100 per cent good, just as scarcely any one will claim that the results would be 100 per cent bad. But from 17 years experience in the Service, uniformed and otherwise, I am convinced that the good results from general use of standard garments of the right sort will be much nearer 100 per cent than 50.

Our experience is ample to select clothing that is good-looking, durable, and well adapted to the average requirements of Forest officers. The purchase of such clothing in quantity will enable most Forest officers to be well-dressed and suitably dressed at a lower cost than if each buys for himself. A uniform that is dignified and without ostentation will add a quiet and, to my thinking, desirable distinction to Service men. It will stand for the Forest Service. It will identify its wearers with the Forest Service. The wearing of it will not only better our appearance, by and large; it will help to bind us all together as fellow members of the organization. It will be a visible expression to ourselves and to the people we meet of the public work which we are doing and of the things which we stand for. It will stiffen up our own loyalty. An old Army officer once said to a subaltern who was on the carpet, "Get drunk if you must, but take off the uniform of the United States Army before you do."

It is time that the uniform question was settled. So be it. I am going to ask the Forest officers under permanent appointment whose work carries them into the field to equip themselves with Service uniforms and to wear them on field duty habitually except when engaged on work for which other clothing is more suitable. I don't expect a Ranger to wear the uniform on the fire line or when grubbing out a trail or when scaling a deck of pitchy logs, unless he chooses. I don't propose to check up on the procurement of uniforms or on the times of putting them on and taking them off. When I meet a Forest officer not in uniform I will not order the strong-arm squad forwith to hog-tie and clothe him. I will simply put it up to the men in the Service to carry out the spirit and intent of the plan, and I know that is all I need to do. Nor is there any reason why the uniform should not be worn generally in Forest Service offices, from Washington out. I hope that it will, but that will be a matter of personal choice.

We will not prescribe too many inflexible details. There will be considerable latitude for choice--wool or khaki, riding breeches or long trousers, coats, cruisers shirts, or "Forestry" flannel. There will be no insignia of rank, neither crossed thermos bottles for the recreation engineer nor crossed hatchets for the fiscal agent. There are two things, however, which I think should be added to the old uniform. The first is the Forest Service tree, a green tree not a dead one, on the coat lapels--for the sake of distinctiveness. The second is service stripes, one for every three or five years, of inconspicuous color matching the coat and sewed on the left sleeve.

As to the Service Uniform (Cont.)

The forthcoming "ukase" on uniforms will make no mention of skirts or blouses. No czar, public or private, ever attempted to regulate women's garb and got away with it. But I will not be surprised to see "forestry green" apparel making its appearance in flowing lines; and when it does the Chief's feelings will not be hurt in the slightest.

Forest Fires in District One

By Howard R. Flint, D-1

It is believed that the 10-day fire reports for September 20 virtually mark the close of the 1921 fire season, so far as this District is concerned.

In the western part of District One, the abnormal season has come to be regarded as the normal one and the 1921 season is no exception to this rule. Up to July 10, the season was very favorable so far as the occurrence and spread of fire was concerned. There occurred but 88 fires with a total of 83 acres of National Forest lands burned over. At this time a perusal of the weather records gave a hint that conditions were becoming critical in the northwest quarter of the District, fairly good for the eastern portion and favorable for the southwest portion. This general condition continued to exist throughout the season with the critical situation in the northwest and north-central parts of the District becoming more and more acute as the season advanced. On September 1, seven weather stations, widely distributed over the northwest and central parts of the District reported less precipitation between April 1 and September 1 than any previous year of record, not excepting our two worst fire seasons, 1910 and 1919.

Under these conditions, the fire organization was severely tested over part of the District and a total of 1284 fires were handled with a burned-over area of 16,932 acres of National Forest land, and an expenditure from the fire fund of about $270,000.00; approximately $20,000.00 of which is to be refunded by cooperating agencies.

District annual averages for the years 1908 to 1920 inclusive show 1,201 fires; 237,078 acres of National Forest land burned over, and an expenditure of $376,287.00 from the fire fund. The average annual number of lightning fires for the period is 416 and the number for this season is 455. Thus, it becomes apparent that the season 1921 was about an average season in number of fires occurring, number of fires caused by lightning, and in the duration of the season.

The organization may therefore feel somewhat encouraged by the facts that expenditures stand at about 70 per cent of the average and acres burned over at only about 5 per cent of the average. Realizing that a conclusion based on statistics, like a little knowledge, is dangerous, it still seems that the District can feel that they have made material progress and that we should cast about us for the causes which have occasioned this desirable result. With becoming magnanimity, we must admit that two important climatic factors were favorable; first--lightning fires were well distributed both as to time of occurrence and territory, second--the occurrence of high winds during the fire season was infrequent. Giving these two important factors and the improved labor situation full credit for their part in the results, there still seems reason to believe that the abnormally dry season was handled with a fair degree of success because of the strength of the protection organization, vigorous law enforcement campaign and timely placing of emergency patrol.

Knowing that the organization can still be greatly improved, that the law enforcement campaign should bear increasing fruit next season, and that the knowledge of the task is steadily growing, the outlook for better results in the future is bright, but there is no room for complacency and no time for rest on present achievements.

Right There's Where I made My Big Mistake

"I had been a member of the Forest Service about twelve years; was interested in my work and enjoyed the confidence of my superiors and friendship of my fellow workers. Then one day, during the war, a feeling of unrest was born, and continued to grow until finally attracted by higher salary I decided to resign.

"After several weeks of mental conflict between my love for the Service and desire for more money, I signed my resignation and mailed it, but--Right there's where I. made my big mistake."--An ex-Forest Officer.

Story Behind Memorandum 350

By Paul D. Kelleter, Washington

In the year 1902, in the month of September, and in the good old days when doing "boundary work" brought joy into the lives of foresters, a certain "agent at $720 per" having a crew of helpers with him found his way onto an Indian Reservation in Utah. There is silence in the record as to the behavior of the crew on this particular occasion, but we do know that the visitation proved obnoxious to the agent in charge of the reservation. He asked the other "agent" for a show-down for reasons for his presence and a showing of credentials. Neither reasons nor credentials were satisfactory so the occurrence was reported to headquarters. The only credentials the forester was able to produce was a letterhead of the office stationery. In consequence of this occurrence the Secretary of the Interior on September 16, 1902, wrote the Secretary of Agriculture from which the following paragraph is quoted:

"In order to avoid embarrassment and annoyance to Indian agents, as well as to the representatives of your Department who may in the future be required to visit Indian reservations on official business, and in the interest of good government upon such reservations, I respectfully request that hereafter whenever it is desired to send such agents or representatives upon an Indian reservation, that the agents in charge of such reservations be notified thereof through this Department, so that no misunderstanding may arise regarding the presence of such persons thereon."

Administrative Regulation 52 was the result. Now after 19 years of servitude under this regulation the Secretary of the Interior on September 21, 1921, apparently is willing to take a chance and feels perhaps we have done sufficient penance and has the courage to believe that field officers of the Department of the present day are endowed with more tact and so suggests the substitution of instructions that will obviate the necessity of getting authority from Washington and make it possible to deal direct with the superintendents of the several reservations.

The short cut is of interest to Forest officers because of the increasing number of cooperative undertakings with officials of the Indian Service. Memorandum 350 has been issued by the Secretary of Agriculture bringing Regulation 52 up to date.

"Salable" Publicity

(An answer to District Forester Morrell's "Questionable Publicity" in Service Bulletin of October 3)

"Jim Jones was just bitten by a dog," exclaimed the new reporter, bursting into the Editor's office.

"Nothing to it," replied the Editor, "that isn't news. Now if Jim had bitten the dog--well, that's another story, and we'd run it on the front page with a scare-head."

What is news? "A happening of timely interest." But of interest to whom? My friend dies. Does that interest you? Probably not. A noted murderer is hanged. There's more news in that. Down South a few months ago the sheriff forgot to hang a man. Every paper in this country ran the story--that was real news.

Those of us who undertake to play the publicity game must accept its limitations. To the editor the question of news is a question of how many people will be interested. What do you read yourself? Barring your special interests, you want to read about the unusual, do you not?

"But," you say, "news also has to do with things that are of general interest." That's right, too. The more the public knows about a man or a thing, the more news value has any happening that connects up with him or it. When a man gets to be President, the public will read with interest that he is in bed with a cold, eats mush for breakfast, and has a dog named "Laddie." Some of them will also read a President's message to Congress.

The Forest Service is approaching its seventeenth birthday, and is big and husky enough to be pretty well known throughout the length and breadth of our land. But is it? Not so that you would notice it. To-day, there are probably anywhere from ninety to one-hundred million people in the United States that don't even know there are such things as National Forests, let alone anything about the Forest Service.

Is that our fault? Partly. It is also our misfortune. We would be better off if our work were better known. And it would be much easier to make it better known if more people took an interest in what we are trying to do.

But we can't get but a small number of our citizens interested in the kind of things we want them to know. Most of them will pay no attention to publicity so cut-and-dried (from their standpoint), or so technical that only local or trade papers and magazines, with a limited circulation, will publish it. And when it comes to reproducing photographs--well, try some of your hard-boiled cowboys, homesteaders, lumberjacks, etc., on the rotogravure editors of our national publications and learn for yourself.

Any one who tries to sell the Service and its work to the public must realize, sooner or later, that "timeliness" and "uniqueness" are his two best selling points. My friend Will Barnes recently told me how he had half of a good story "cut" by the editors of a magazine because it was, as they said, "hackneyed stuff for which they had no space." What was it about? Nothing more nor less than a very good description of the life and work of the Forest Ranger. A thousand stories, yes, and pictures, too, of bewhiskered lookouts and the like would all receive a similar cordial reception--from the wastepaper basket.

Why is it we play up airplane patrol, big forest fires, women lookouts, summer-home sites, and recreation? Why not feature systems of forest management, minimum silvicultural requirements, revegetation of ranges, or other Service work-a-day problems in our news items, pictures, and stories? The public is not interested, and worth while newspapers and magazines will not accept it as a gift. Also, it isn't news. I am speaking of national publicity, not small-town "copy." All the above material has a legitimate place in local and State news, providing you can get the editor to take it, but it is not often you see it featured in a magazine or an Associated Press release.

If a million or two readers of the "Woman's Home Companion saw and enjoyed the photographs of the "lady lookout of Devil's Head," that number will know that there are such things as fire lookouts on the National Forests of the West--which they probably never heard of before. They also got a good idea of what a real, up-to-date lookout station is like, and should be on all Forests, even though it was "manned" by a woman instead of a "mossback." The blind men who felt of the elephant at least had their curiosity aroused, and learned a little something about the beast. And once you have something to build on, new impressions that correct the old can more easily be added. Is not the first step in good salesmanship to secure the customer's attention? And the next, to awaken interest? When you have done that, you have some prospect of being able to sell your goods.

Nor should it be forgotten that newspapers have published many photographs of lookouts that did not owe their interest to women. But none of them would have made the Woman's Home Companion right now. Is a half-loaf better than no bread, or not?--Editor.

WASHINGTON NOTES

Lieut. Col. James A. Woodruff, Commander of the Forestry Engineers in France during the World War has been assigned to the command of the important engineer post and school at Camp Humphreys, near Accotink, Virginia.

A Forestry Conference will be held at Seattle October 21 under the auspices of the State Development Bureau, Seattle Chamber of Commerce and Commercial Club. Addresses on forestry topics will be delivered by prominent State and Government foresters, lumbermen, and members of business organizations of the Northwest.

A Scaler's Examination will be held at special designated points in Districts 1, 3, 5, and 6 on October 26 to 27. In addition to practical questions the examination will also include a field test.

Hearings on the Forest Service section of the Agricultural Appropriation Bill were held before General Moseley, special representative of the Bureau of the Budget, on October 13. Colonel Greeley and Mr. E. A. Sherman represented the Service.

Canadian Cigarette Manufacturers are now packing red printed slips containing the following fire prevention data in their cigarette packages:

"Please do not throw away a lighted cigarette. See that it is dead out.

"Lighted tobacco and matches are especially destructive in the forests.

"Living forests mean liberal employment. Dead forests employ nobody.

"Don't be responsible for a dead forest.

"This caution is printed as a contribution to the forest conservation movement."

A Two Weeks' Fire Conference will be held at Mather's Field near Sacramento beginning November 14, attended by representatives from each District and Inspector Kelley and Assistant Forester Headley from the Washington office.

National Forest Receipts for the period July 1 to September 30 show an increase over the net total for the same period last year of $427,028. Grazing shows a total increase of $559,484, but this is offset by a reduction of $130,572 in timber sales, $7,225 in grazing trespass, and $1,382 in timber trespass. District increases range from $9,335 (D-8) to $148,024 (D-4). District 7 alone shows a decrease of $16,272.

FOREST PRODUCTS LABORATORY

"Virgin Growth" and "Second Growth": Specifications often call for "virgin growth" or "second growth" timber, yet the terms are without fixed significance, and the material when delivered can not be positively identified as belonging to one class or the other.

"Virgin growth," also called "first growth" or "old growth," means timber which grew up in a standing forest under conditions of active competition for sunlight and moisture.

"Second growth," when applied to a forest stand, usually means timber whose main growing period occurred under conditions of lessened competition, after all or a portion of the original stand had been removed by cutting, fire, wind, or other means. To the wood user, "second growth" means material cut from either of these sources. In general, the term is associated with the idea of a second crop of timber, though specific applications may vary.

Virgin growth is generally thought of as slow growing timber, while second growth, due to more favorable conditions, is relatively rapid. A faster rate of growth is evidenced by wider annual rings. These are popularly supposed to indicate stronger and tougher wood in the hardwoods, such as ash, hickory, elm, and oak; and weaker and brashy wood in the conifers, such as pine and fir. Hence, for uses in which strength and toughness are essential, second growth is sought among the hardwoods, whereas in conifers virgin growth is desired.

FOREST PRODUCTS LABORATORY (Cont.)

As a second growth forest attains maturity, the rate of growth slows up, and the annual rings may be no wider than in virgin growth timber of the same size. On the other hand, when a slow-growing suppressed forest tree is freed by removing the neighboring trees, it may grow rapidly for a long period. Therefore it is possible to have some wood with the characteristics of virgin growth and some with those of second growth in the same tree. Furthermore, individual trees in a virgin growth forest may have the characteristics of second growth throughout and vice versa.

Instead of broadly specifying "second growth" or "virgin growth" or depending upon requirements on the width of annual rings to secure good material, the Forest Products Laboratory considers it advisable to disregard rate of growth and rely upon density as a guide to quality.

DISTRICT 1 - NORTHERN DISTRICT

Kootenai River Power Development: The August 15 issue of "Paper and Pulp Industry" carries an item regarding a big power development project on the Kootenai River. According to this report, application has been filed with the Federal Trade Commission by the Kootenai Power Construction Co. of New York City for the development of 85,000 horsepower at Kootenai, Montana, on the Kootenai River. It is proposed to build a dam and power house to furnish power for a pulp mill at the confluence of the Kootenai and Yaak rivers.

Chemical Plant at Eureka: The building operations for this new plant are well under way. One building 60 x 100, is nearing completion and work on a second structure is progressing rapidly. Several carloads of machinery and equipment including a large distillation retort are on the ground. The company plans to use tamarack butts and logs for the manufacture of chemical products used in making soft drinks and baking powder. In addition to the manufacture of mucic acid, which is one of the principal ingredients of baking powder and certain soda fountain drinks, the principal products for the present will be pulp, tannic extract, oxalic acid and other products to be manufactured from larch. Dr. Acree, formerly connected with the Madison Laboratory, has been on the ground for several weeks and will have active charge of the entire plant.

Expert Marking: The French Gulch sale on the Deerlodge Forest was recently examined by Morrell, Stockdale, Koch and Clark. This is one of the famous sales in the District on which the lodgepole marking rules were developed, and in which nearly all the "big bugs" in the Service have taken a hand. Pinchot, Graves, Greeley, Mason, Carter, Stuart, Preston, Stockdale, and numerous others helped to work out the marking on this sale. Nearly every silvicultural method possible was used, from clear-cutting to selection cutting. It is interesting to note that in spite of the array of talent which contributed to the marking on this sale, there is an almost entire lack of reproduction. Possibly the lack of results may be due to the smelter fumes from the Anaconda smelter which are beginning to affect the area seriously.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Brown Bear Mistakes Porch Post for Pinus Contorta and Loses Life: Despite the presence of running water and bath tubs at some Ranger Stations, and the displacement of bronzos by flivvers, certain Forests still uphold their old-time "wild and wooly" reputation. This from the Medicine Bow.

A 225-pound brown bear scratched on the office window screen at the Bo Ranger Station about 1 a. m., treed himself on a porch post and immediately relieved the shortage in fresh meat in that neighborhood.

A visitor sleeping on a couch in the office (as visitors are wont to do) heard the scratching, saw the bear at the window, seized the handy rifle in the corner, threw open the door and "Goodbye, Bruin."

Ranger Henry girded in robe-de-nuit and heavy artillery arrived on the scene as reinforcements and was "in at the kill!"

DISTRICT 2 (Cont.)

Jeffers to Stay in Service: In the September 26 issue of the Service Bulletin, it was stated that Forest Supervisor Dwight S. Jeffers of the Uncompahgre National Forest had accepted a professorship at Ames and was leaving the Service.

We are very glad to state that Supervisor Jeffers has changed his plans and will remain with the Service.

Timber Sale Receipts Break All Records: The total value of timber cut on the Medicine Bow during the period July 1 to September 30, amounting to $30,283, breaks all records for the Forest. The nearest approach to this record was during the same period in 1919 when receipts of $20,020.00 were received. A number of contracts are being completed which, together with the operator's desire to market all ties possible under the old railroad contract prices, accounts for the increase in this activity. One new contract has been entered into by the Union Pacific at prices considerably lower than the recent market.

Ranger Bill Says:

Supervisor Jim was a' plannin' to lay off his lookout last week, but one of the Guards and a minister beat him to her.

"I'm havin' so many arguments with users that my diary's becomin' a regular scrap-book," says Ranger Ed Skinner.

Guard Ketchum is goin' to quit smokin' all winter so's to be in trainin' for next summer.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Game Notes: Everybody is doing it. Doing what? Showing interest in the conservation of wild life, of course. Each State in the Union has held a regular legislative session in 1921 except Maryland, Virginia, Kentucky, Alabama, Mississippi, and Louisiana, and only five, Iowa, Oklahoma, Texas, Arizona and Utah, of the 42 legislatures that have convened, did not make changes in their game laws. Idaho, Kansas, Nebraska, Oregon, Washington, West Virginia, and Wyoming made almost complete revisions while, in strictly local interest, New Mexico has put herself right up near the head of the procession with effective and modern methods for the scientific handling of the game problem.

After the $5.00 Prize: The Daily News of the Intermountain District, in its issue of August 29, clips from the Boise Accelerator, "Ranger Irby reports that the electric storm on July 24 started five fires on this District at widely separated points, 4 Class A and one Class C, but all were extinguished within a very short time. He also states that the best "get away" time on a fire so far is twelve minutes and that he and Forest Guard Farlow are after the $5.00 prize." D-3 men do not have any $5.00 cash prizes for which to strive, but figures taken from an inspection of this season's fire results on the Tusayan, merit, we think, a million dollars worth of approbation which, invested in experience, will draw an annuity of satisfaction long after any prize fund is spent and forgotten. There was a total of 55 fires on the Tusayan this season. One fire occurred after the rains set in and so is not counted. Seven fires were encountered by Rangers in regular course of administrative travel and six were discovered and suppressed by employees of the Saginaw-Manistee Lumber Company without the assistance of Forest officers, hence, these 13 are omitted because the elapsed time is nil, which leaves a net sum of 41 fires on which the average "get away" time was eight and one-fourth (8¼) minutes, while the "get away" time on only one fire out of the entire 54 exceeded 20 minutes.

Department Exhibit: The Department of Agriculture exhibit was shown at the Northern New Mexico Fair held at Raton October 4-7, under the supervision of Mr. Kircher. Forest Service, Bureau of Public Roads, Biological Survey, and the Bureau of Markets were represented.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Elko Fair Ends: The famous Elko Fair is at an end and the town has settled down once more to the regular grind. The two features of the fair were the Forest Service exhibit and the 49 Camp, sort of balancing each other. At the 49 Camp there were the usual dancing pavilion, roulette tables, stud-horse poker games, faro layouts, etc., and after losing the summer crop at this place, the populace was enabled to visit the Forest Service exhibit for intellectual solace and uplift. Messrs. Scott and Kidder were in charge of the exhibit.--Humboldt Hummer.

Four Reels of Department Motion Pictures Received: The District office is in receipt of the following motion picture reels from the Department Motion Picture Laboratory: "Lambs from Range to Market," "Grazing Industry," "U.S. World Champion Farmer," and "Out of the Shadows." During this week these reels are being shown to various troops of Boy Scouts and Girl Scouts, schools, etc., after which they will be routed among the Forests.

Road and Trail Work for Season Closes: The road and trail construction season on the Toiyabe ended the 30th. Trail Foreman Vigus brought in a load of equipment Friday and the day before sent in the time for his men. The Kingston-Tierney Trail Project--the last project for this season--turned out to be a much larger job than first expected, and Mr. Vigus tells us his men put in some hard licks to get the trail into Cottonwood Canyon before cold weather made further work impracticable.--Toiyabe Telegram.

Day's Work for Herder: Mr. S. S. Van Boskirk reports the killing of a large cinnamon bear on September 13 on the ridge to the south and west of the dipping corral in Kuck Woodard Canyon. The bear had split the herd and killed three lambs before it was discovered. When found it made no attempt to get away. The herder, Ben Martines, shot the bear. The two hams, which weighed 310 lbs., were sold to the butcher shop in Clear Creek at 15¢ per lb., the hide sold for $50.00--which makes not a bad day for the herder.--Manti News Letter.

DISTRICT 5 - CALIFORNIA DISTRICT

Grand Opera by Radio: Alder Springs is becoming ultra modern. Rube Hartman started it by installing electric lights at his hotel. Then Dr. W. T. Rathbun of Colusa and his son, Dr. Stanley Rathbun, came up with a transmitting set, which they helped Radio Operator Lavender install. This has enabled Lavender to talk with the aviation field at Corning and with the F. S. station at Yreka. We have also enjoyed musical concerts sent out by radio in the evening from Colen B. Kennedy Experimental Station, 40 miles south of San Francisco; one of the Caruso records came in so clear that it could be plainly heard in the Supervisor's house more than 100 feet distant from the radio receiving set in the office. We also pick up the time at noon, which is sent out by radio from Eureka, Mare Island and San Diego,--California.

Forest Officers Attend Stock Meeting: Inspector of Grazing Chapline, Grazing Examiner L. S. Smith and Supervisor Durbin attended a meeting of the Klamath Woolgrowers' Association at Klamath Falls, Oregon, on the evening of September 16. A number of local questions were taken up and the meeting also discussed the bill before Congress to add a portion of the Crater National Forest to the Crater National Park. Secretary Carnahan, of the Woolgrowers' Association, gave a talk in which he stated that the Forest Service was handling this area so as to put the land to its highest use and that if the area was added to the Park it would deprive the people of the privilege of grazing 34,000 head of sheep and a large number of other stock. The Association also passed a resolution requesting their State representative to fight the bill now pending before Congress, which proposes to place all the grazing on the Public Domain under the jurisdiction of the Register and Receiver of the General Land Office.

The "Big Swede": Some men get experience in one way, some in another. A short time ago a bad fire occurred on the Modoc and it was necessary to call out all the men in one of the road camps to corral it. The evening before these men had witnessed the fire jumping from one ridge to another and as a big Swede put it, "Going like h--." This same fellow took charge of the crew as soon as he reached the fire line and not only did about the work of two men himself but saw to it that everybody else hit about the same pace. He did not ask the advice of the Forest officers as to where the fire line was to be built, but would send "Ole Olson" and a few other men to cut off some dangerous point and "Johnnie Johnson" and a few other "Johnsons" to some other place. Believing the "big boss" was liable to play himself out, as well as the whole crew, before the middle of the day, the Supervisor suggested that he take it a little easy as it might be necessary for them to work all day and part of the night. The big Swede replied that there would be no letting up as the fire had to be corralled before the wind came up, stating that he was on a fire in Idaho a few years ago and because he loafed a little on the job the first day, it caused him to have to fight fire for two months.

Hydro-Electric Engineer E. W. Kramer and Assistant Engineer Ketchum, both from District 1, are now detailed to District 5 and are engaged on hydro-electric work.

DISTRICT 6 - NORTH PACIFIC DISTRICT

D. V. Stroop, Junior Civil Engineer, has resigned, effective September 1, to accept a position with State Highway Commission of North Carolina. Mr. Stroop was transferred to the Forest Service from the War Department (Office of Public Buildings) on July 1, 1919. His Forest Service friends regret to see him go but wish him the best of success in his new field.

Logging Congress: The 12th Pacific Logging Congress will be held in San Francisco from October 26 to 29.

Light Burning: The much discussed and, as foresters believe, pernicious practice of "light burning" yellow pine forests is now under trial in central Oregon. During July and August the Long-Bell Lumber Company, which recently acquired the Booth-Kelly tract in the Yamsey Mountain country near the Fremont Forest, has been running a light surface fire over the ground. Preliminary to burning they checker-boarded the area with a drag and burned one square at a time. Such burning invariably results in the destruction of the seedlings and small saplings, thereby postponing if not precluding a second crop. The effect on mature timber and on subsequent fire protection is questionable, and the area will be watched with interest by lumbermen and foresters who have argued the merits and objections of this practice.

Even Mexico in Line! A bill was recently introduced in the House of Representatives of Mexico by the Department of Agriculture and Promotion for a Forestry Law. The principal purpose will be the protection of the forests of Mexico as they are necessary for the maintenance of the climatic and economic balance and to prevent the disintegration of the soil and to conserve the water supply of the rivers and subterranean streams.

The most interesting provision of the proposed law is that part to establish "forest zones"; and within these zones all timberland, including those privately owned, must be handled according to Forestry principles, under Government supervision.

DISTRICT 7 - EASTERN DISTRICT

Ranger J. W. Bowman, of the North River District, while climbing a tree to repair a broken swinger fell about 15 feet to the ground, sustaining a broken arm and a general shake-up. The bone was set three times and each time it slipped out of place. Finally the ends were tied together with a silver wire, and it is hoped that a straight arm will result.--Shenandoah.

The First Fire--or rather, the first two fires of the fall season--occurred recently on the Massanutten Ranger District. One was caused by brush burners; the other was probably due to a careless smoker throwing a cigar or cigarette stub in inflammable material by the roadside as he was passing through the New Market Gap.--Shenandoah.

DISTRICT 8 - ALASKA DISTRICT

Correction: Owing to lack of immediate need of a hydro-electric engineer in Alaska, and due to the great pressure of water power work in California, Mr. Mulder was detailed to the Forest Service at San Francisco instead of being sent to Alaska, as reported in Service Bulletin of October 10.

Mr. J. C. Dort, Assistant District Engineer of District 5, has been in District 8 since about July 1 and has been engaged in making power investigations of projects for which applications have been filed under the Federal Water Power Act, and also in making power reconnaissances of sites which are believed may possibly be of value in connection with the utilization of the pulp and timber of the National Forests of Alaska. It is expected that his field work will be terminated about the middle of November, when he will return to San Francisco and work up his reports.

Service Bulletin
U. S. FOREST SERVICE
(Contents Confidential)

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LIVING UP TO THE LAW

(Extracts from a letter by District Forester Morrell to Supervisors of District 1)

The National Forests are administered, as every one in the Service knows, in accordance with Acts of Congress, which specify the manner in which our business must be conducted. Based on the authority delegated to him by Congress, the Secretary of Agriculture has issued the Fiscal Regulations, the Administrative Regulations, and those in the Forest Service Manual, for our guidance in the administration of the Forests. The obligation for faithful compliance with laws and regulations is no less real, but on the contrary even more necessary, when they affect our own deportment, or the conduct of strictly Forest Service business. I am not sure that we have always appreciated this in the Forest Service with the desired keenness of perception. To state a specific example: Congress has specified each year the amount of money that may be expended on any one building. The limit has been specific and without qualifications. It is entirely possible for any one of us to read it and correctly construe its meaning. If any one of us is responsible for violating that law, we are lawbreakers just as much as is the citizen who cuts timber in trespass.

I have so frequently met with the argument that a law or regulation was not wise as a reason for not complying strictly with it that the point will bear further emphasis. If laws and regulations seem to us unwise, and we can convince the Forester that they are, he will do his best to get them changed. Unless they are changed, we must not forget that our form of Government makes Congress in the end responsible for the proper conduct of the public business. We do not play the part either of good citizens or of loyal employees when we seek to evade them. Neither would evasion be wise from the standpoint of expediency alone, because evasion and lack of thorough compliance results in stricter laws or regulations designed to cure our delinquencies.

I want to make it clear that each man is expected to know Administrative and Fiscal Regulations and the laws which govern the conduct of Forest Service business, and that the burden of proper interpretation and execution of these laws rests on each individual. In other words, it is up to each Supervisor to have and to require throughout his organization the proper fiscal and financial conscience. It is up to him to know what is right, or if he does not know, to inquire before going ahead. Members of the District office are required to search out and report any lack of compliance, and if they fail to do so, or if Supervisors fail to detect lack of compliance within their organizations, responsibility for such lack rests squarely on them. It is impossible to outline the many things which should be looked out for, nor does that seem necessary; but your attention is specifically called to the necessity for strict conformity with the building limitation and the law prohibiting the exchange of Government property, and for a compliance with the terms of your letters of authorization, and those parts of the Fiscal Regulations relating to purchases. The point I want to make clear is that you will be held personally responsible for any violations of this kind which occur.

The Accounts Disaster at Missoula and Its Lessons

By Colonel W. B. Greeley

For the first time in its history, the Forest Service has suffered a serious loss in public funds and a serious blow to its good name from the dishonesty of one of its own members. We have been through the painful process of investigating and sifting, of fixing responsibility and locating the weaknesses which made possible a theft of such magnitude. As a measure of protection, a check has been made on every other disbursing officer in the Service, and every one of them has been found absolutely square. No one who knows the Forest Service believed that such a thing was possible. No one believes that it will happen again. But we must build, from the ruins of this disaster, a stronger and surer structure for the disbursement and protection of the funds entrusted to us.

The Secretary of Agriculture does not propose to safeguard his Department in the future, as he might do with ample justification, by restricting our field disbursements or by controlling them more closely through Departmental agencies. He has taken a liberal and sympathetic view of the disbursing and accounting needs of the Forest Service. He recognizes the necessity for a flexible, field disbursing system, adapted to the character of National Forest work and to the requirements of emergencies. He has placed the responsibility for correcting weaknesses and protecting the funds of the Department squarely upon the Service. We must justify the confidence which he imposes in us. There can be no alibis, no reliance upon safeguards other than what we provide ourselves. The job is up to us.

Dependence upon correctly kept books and Treasury statements must be a thing of the past. We must provide currently and locally the checks dictated by conservative business practice. And to make them sure and effective, we must put into Service accounts the same clear-cut responsibility that we have put into the other branches of our work. The disbursement of funds will be part and parcel of the Forest Service organization. The District Forester will have the same responsibility in fiscal matters as for the efficient conduct of his timber sales. The Forester will stand accountable for Service disbursements in exactly the same measure as for the protection of the National Forests.

The task remaining is to translate this responsibility into an effective system of control. The plan now being worked out will provide for local auditors in each District, selected by and responsible to the District Forester. The Chief of Finance and Accounts will be responsible to the Forester for an adequate inspection and check of the local audits and for any further examinations on his own account necessary to satisfy him at all times that the disbursements of the Service are protected from irregular or dangerous practices. No radical changes in disbursing methods are required. The employment of temporary disbursing officers necessary under some field conditions will be continued. Closer control of temporary disbursements must, however, be exercised in certain particulars; and a few practices which have come into use here and there must be discontinued, not because they involve dishonesty but because they are out of line with a sound and well guarded fiscal system. Some of these changes may appear to the men in the field as red tape restrictions. Some of them may delay slightly the transaction of business. But we must not stop short of any steps which are needed to make good the responsibility entrusted to the Service for maintaining a fiscal system that will command universal respect.

There is another lesson from the Missoula disaster which we will all do well to heed. The family spirit of the Service, the mutual trust of its members in one another, is one of our strongest and finest qualities. The trying experience of the Accounts office in Missoula illustrates, however, the danger of being led by this strong fellow feeling beyond the point where loyalty to the Service demanded plain speech and the distasteful duty of voicing well-founded suspicion. Had irregular and questionable things known to members of that office been brought into the light and cleared by authoritative investigation, the infidelity of the trusted chief would have been disclosed long before it had wrought such damage. We do not want tale bearing or hearsay suspicion in the Forest Service. We want no spy system. We want no atmosphere of distrust. But now and then the time may come when any one of us must soberly weigh his duty and recognize his responsibility under the circumstances. The very family spirit means nothing more nor less than that responsibility for the good name and standing of the Forest Service is shared by every one. It does not stop with the "Chief." It goes all the way down the line.

The Outdoors Man

He must come back a better man,
Beneath the summer bronze and tan,
Who turns his back on city strife
To neighbor with the trees;
He must be stronger for the fight
And see with clearer eye the right,
Who fares beneath the open sky
And welcomes every breeze.

The man who loves all living things
Enough to go where Nature flings
Her glories everywhere about,
And dwell with them awhile,
Must be, when he comes back once more,
A little better than before,
A little surer of his faith
And readier to smile.

He never can be wholly bad
Who seeks the sunshine and is glad
To hear a song bird's melody
Or wade a laughing stream;
Nor worse than when he went away
Will he return at close of day
Who's chummed with happy birds and trees,
And taken time to dream.

--Edgar A. Guest.

Motorists and Forest Fires

Officers of the Massachusetts forest service declare that the number of fires in the forests in the State bears a direct relation to the number of automobile licenses issued. As the automobiles increase so do the forest fires. They claim that city people, touring through the woods by automobile, leave their noonday camp fires burning and so start fires. The statement is possibly justified, but analyzed it simply means, "more tourists, more fires." The remedy is not fewer automobiles, but more widespread education as to the dangers of careless handling of fires in the forests. The more city people there are who go for their recreation to the forest, the better will the value of the forest be appreciated and the easier it will be to have conservation measures carried out. If the subject is approached in this way the automobile will become not a menace to the forest, but a great aid to forest conservation.--Canada Forestry News Letter.

FOREST PRODUCTS LABORATORY

The Secretary Drops In: The Laboratory was honored on October 3 by a visit from Secretary of Agriculture Wallace. Colonel Greeley met the Secretary at Madison and made the rounds with the party. The entire morning was devoted to a close view of the many laboratory processes, most of the testing machines being in operation to illustrate the great variety of work carried on throughout the year. We hope that the Secretary carried off as good an impression of the Laboratory as we got of him. As a Madison paper said, "He's just a regular home sort of folks."

Why Paint the Lily? "Are we exaggerating when we guarantee our chestnut cross arms for 30 years," says a manufacturer specializing in that commodity. The Laboratory said it doubted very much if treating cross arms would be a paying proposition. Anyway, we had no data. As a matter of fact, we're a mere infant in years aside of an aged and hoary chestnut cross arm, for but a year has elapsed since our 10th birthday and that's only one-third as long as a chestnut cross arm might be expected to last. Then thirty years ago few folks thought of creosoting, so we can't even consult others on this weighty topic.

FOREST PRODUCTS LABORATORY (Cont.)

The Lab. Mail Bag: A letter asking how to make paper alkali proof. It seems that manufacturers of soap are seeking an alkali-proof wrapping paper.

An aged inventor in a large eastern city asks us to work out the details of a secret process he has discovered whereby a combination of steam and ozone condition lumber so that it fails to take up moisture ever after. One drawback is the fact that he specifies he shall retain control of any further details we work out! He has been asked for a sample of the wood dried by his process.

DISTRICT 1 - NORTHERN DISTRICT

Free Use: District 1 is initiating a much more liberal policy in the granting of dead timber to local residents. It is proposed to open most of the Forests as free use areas for dead timber and permit material of this class to be taken freely for personal use without the formality of a permit. It is expected that a very considerable amount of time for the Rangers will be saved in this way, and that the local residents affected will greatly appreciate the absence of red tape in securing dead wood from the Forests.--E.K.

R. G. Merritt, formerly Forest Examiner on the Coeur d'Alene and Blackfeet Forest, now Assistant Secretary of the North Carolina Pine Association, will, according to a recent issue of the National Lumber Bulletin, become the assistant to the chief of the Lumber Division of the Bureau of Foreign and Domestic Commerce, on January 1, 1922.

The Great Northern Tie Treating Plant, located at Somers, Montana, is being operated at full capacity. The total output for the year will amount to 750,000 ties. The plant is equipped with four cylinders, each 108' long and 6 feet in diameter, which hold 13 cylinder cars, or about 350 No. 1 standard ties. Eight full retort loads are treated per day of 24 hours. The zinc chloride process is used exclusively. Some of the ties treated with a 4 or 6 per cent solution of this salt and placed in the Great Northern tracks in 1903, are still serviceable. In the spring of 1911, 43,000 treated and untreated ties were laid between Belt and Gerber on the Butte Division of the Great Northern with the object of ascertaining the efficiency of various preservatives. After 9 years the untreated ties were coming out in large quantities mostly due to decay, while those of the same type and timber treated with zinc chloride show comparatively small renewals. This speaks well for the Burnettizing treatment at the Somers plant. The present cost of this treatment is approximately 20 cents per tie.--S. V. Fullaway.

Ranger Bill Says:

I don't know what a "Ukase" is, but I reckon it's "Bill," not "Bull."

What's become of the old time Ranger who could stay out on a pack trip a week or two at a stretch?

If the Gov't. don't speed up, a lot of us is goin' to be gettin' expense disallowances by Ouija board some of these days.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Charcoal Burning on a commercial basis has started on the Medicine Bow Forest. As far as is known, this is the first time that the industry has been practiced in the region and it is being watched with considerable interest because if market conditions warrant, it is exceedingly likely to become a permanent industry, and one of considerable importance, as there is an immense cut-over area to work over.

The charcoal burners are going in on the old lodgepole pine tie sales and taking out all the dead and green material left by operators as defective or too small to be merchantable and, therefore, a very close utilization of the timber is now being made.

State Game and Fish Commissioner Parvin placed 25 extra Deputy Game Wardens in the field during the open deer season, October 12 to 15 inclusive. His department is making a special investigation of the lake conditions on the San Isabel Forest with a view to organizing a plan for stocking and spawn taking. This has been agitated by the Forest Service in connection with the recreation development of that Forest.

New Sheep Driveway on White River: The Department of the Interior has made a special withdrawal of a driveway on the western boundary of the White River National Forest, to take care of a very difficult situation which arose last spring between the cattlemen and sheepmen. The cattlemen have attempted in every possible way to prevent any driveway being located in that locality and were successful last spring in keeping all but one band from driving into the Forest from that side. Appeal has been made by the sheepmen to the Colorado State Rangers for protection in taking their sheep out over the newly established driveway this fall. The appeal has been granted.

Reseeding Old Burn Proves Successful: Forest Examiner Fred R. Johnson recently made an inspection of the planting work done on 312 acres on the Turpin Creek burn, Medicine Bow National Forest, in 1919, and reports that the sowing of the pine seed by cyclone seeders on this area may be considered entirely successful since the seedlings average over 1,200 per acre. About 600 pounds of lodgepole pine seed were used. The balance of the area of about 640 acres will be sown in the same manner this fall.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Smokers' Fires: In response to request from the Forester for data on the number of fires caused by smokers in this District this year, special reports from the Forests show that out of a total of 405 fires, smokers were responsible for 85.

Arizona Drouths: Mr. Randles gathered a lot of intensely interesting incidental data during his summer's work on timber appraisal on the Sitgreaves. From 1900-1904 there was a severe period of drouth in Arizona and invariably the trees on the Sitgreaves record, by slim annual growth rings, this same time of scant rainfall. In 1887 and 1888 there was another drouth, and, in like manner, the trees bear witness.

The Tie That Binds: Ferdinand W. Haasis writes from the Appalachian Forest Experiment Station at Asheville, N. C., that his work is very interesting and his new associates agreeable, but they do not have a Daily Bulletin in D-7. His interest in D-3 still is keen and he would like to keep in touch with old friends and activities of the Southwest.

Milligan the Faithful Claimant: We have the story of one Wm. Milligan, who established residence on his claim on the Apache May 18, 1886, 34 years ago, long before there was any Apache Forest, and has been away from his claim only four times since. He has been off the place, it is said, just twice in the last fifteen years, a year ago this fall, when he filed and again when he went out to submit final proof this spring. Milligan is 70 years old, lives all alone and has a house, according to the homestead report, 28'x28', as well as other adequate improvements.

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Nobody means to start a fire, but a good many persons don't mean very hard not to.--Milwaukee Journal.

DISTRICT 3 (Cont.)

Adios Ward: A dozen Forest Service compadres of Ward Shepard gathered at the Albuquerque Country Club last night and, with Mr. Shepard as the guest of honor, celebrated the last night of his sojourn in the District with an evening dinner party. Jim Mullen, as Master of Ceremonies for the "Scientific Society of the Bedroll and Skillet," presided at table and read papers and complimentary telegrams. Mr. Hammond ordered the transfer of the Manzano's pine tree, pinon nut cracker and "Spanish Terms" to the incoming Supervisor. Mr. Shepard made a brilliant defense of his forest, while all the rest listened to things about the Manzano, discoveries Ward had made, of which they never before had known. Following the dinner the crowd pulled easy chairs into a circle at one end of the big room and swapped reminiscent Forest Service yarns. The party broke up when the cigars gave out, with best wishes for a long and happy career to the guest of the occasion. (Mr. Shepard arrived in Washington on October 17 to take up his duties in the Branch of Research.--Ed.).

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Can You Beat This? There have been related in the Bulletin many so-called physical stunts of Forest officers. The act mentioned below is a mental and not a physical stunt, and probably should not be called a stunt because it is something that every one can do with a little systematic memory training, and can be used as a standard not hard to attain.

Deputy Supervisor Kinney, with a very little special systematic training, was able on a recent trip over a part of the forest, to memorize 120 different plant species which he observed, and to repeat them accurately forward or backward at the end of the trip, and this without the help of any notes whatever.--C.N.W.

Cooperation on the Wasatch: Ranger West has secured cooperation to the amount of $250.00 from the people at Pleasant Grove for the lighting of the new cave in American Fork Canyon. Two hundred high school students donated 10 cents each. A mass meeting was held during which the balance was subscribed. In addition to this, the Wasatch Mountain Club made a trip to the cave and each member donated $1.00, amounting to $25.00. The Payson Alpine Club is now planning to conduct a similar trip.

On September 23rd and 24th, Mr. Mann, West and Bird laid off a portion of the Aspen Grove Trail, and the students and professors of the Brigham Young University, together with a number of prominent business men constructed approximately one and a half miles of trail. President Harris of the University and Mayor Dixon of Provo were among the trail workers and still have blisters on their hands to show for it.

25 Days in Jail: The man arrested by Deputy Supervisor Mink and Ranger Rohwer for shooting sage hens out of season was brought before Judge Doughty last Saturday and was fined $50.00. He would not pay the fine, so was given 25 days in the county bastile. He is there at the present writing.--Humboldt Hummer.

DISTRICT 5 - CALIFORNIA DISTRICT

Lake Tahoe Travel: As an indication of the travel to Lake Tahoe this season, it may be noted that to date 150,000 people have passed through Placerville en route to or from the Lake. All of this travel was by automobile, and this is only one of the seven different main routes leading to Tahoe, although it is the most popular route. The local Placerville paper mentions Yosemite's boast of 90,000 visitors to date, and while this is a big recreation travel, it really looks pretty small compared to the hundreds of thousands of people who have used the Eldorado, Mono and Tahoe Forests around Lake Tahoe. And yet some people say that the Forest Service has no recreation problem, although we will have as many visitors to Lake Tahoe this year as go to the five most popular National Parks in the United States, eliminating the Hot Springs Reservation in Arkansas, and that is a mere health resort.

They Beat Us to It: The Southern Pacific Company beat us to it in giving cooperation. On August 8 a fire was started near Shasta Retreat. Ranger Solaro and Guard Bell went at once to the fire on receipt of notice from the manager of the retreat. They had five men on the fire soon, which they found was set by the railroad. Solaro asked Supervisor Hall to call the S. P. at Dunsmuir for seven or eight men to help on it. This was done and we were promptly told, "We beat you to it; we have already sent twenty men and a water car."--Shasta.

Mr. Pinchot Visits District Office: The District Office was honored on September 30 by a visit from former Forester Gifford Pinchot, who is now State Forester of Pennsylvania.

"Quick, Snappy, American Style!" "Upon investigation Ranger Hurst found camp fire from which fire had spread to surrounding brush, also pelt and offal of sheep which had been killed and dressed near the camp fire. Pelt laid on rock to dry, making it evident that parties intended returning for it later. Figured from this that they lived in vicinity. To strengthen this theory there was no evidence of bed at camp fire. Empty cigarette packages of two different brands showed that there were two or more men in party. On circling picked up tracks of three men leading west on old trail. Followed tracks of three men leading west on old trail. Followed tracks to cabin occupied by Harry Ramsay and Roy Van Sicherer, prospectors. They were not at home. Looked around and found mutton. Upon their return admitted everything when confronted with evidence. Agreed to have one man of party plead guilty to State charge."

(Note by Editor: In the millennium all Forest Officers are going to turn in reports like this, which, in addition to its clearness and conciseness, was neatly typed by Ranger Hurst of the Tahoe.)

DISTRICT 6 - NORTH PACIFIC DISTRICT

Washington State Fair: The Dept. of Agriculture exhibit at the Yakima Fair occupied about 2,500 sq. ft. and was pronounced by the Fair authorities as the best exhibit at the fair. The Forest Service, Biological Survey and Public Roads occupied most of the space, though Farm Management, Forest Pathology, and Weather Bureau were represented. A large percentage of those attending the fair visited the exhibit and a large amount of forest literature was distributed. A National Forest register was handy and a great many people put down their names. It is estimated that there was an attendance of 100,000 at the fair. The committee in charge of D-6 fair exhibits is: Jno. D. Guthrie, Forest Service, Stanley G. Jewett, Biological Survey and A. C. Rose, Public Roads.

It's Percolating--Slowly but Surely: All smoking cars on Oregon Electric trains on the line out of Portland south to Salem, Corvallis, Eugene and Albany have a framed notice in the front end of the cars reading as follows:

"Passengers are strictly forbidden to throw from car windows or any other part of the train, lighted matches, cigars or cigarette stubs or anything else that is liable to cause a fire along the right of way. Your cooperation in preventing fires is earnestly desired by the Forestry Department, also by this company.

A. J. Davidson,
General Manager."

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The test of your public information work is--"Do People Talk About It?"

DISTRICT 6 (Cont.)

He Told It (by 'Phone) to the Judge! Ranger Case gets the hand carved hazel hoe for first blood! He spotted a fire left on the California portion of the Siskiyou, and had the culprits headed off at Patricks Creek. Upon their promise to report at the Supervisor's office in Grants Pass, he let them proceed. They called at the office and agreed to plead guilty. After dinner in Grants Pass we got the telephones all connected up--the Justice of the Peace at Crescent City, Calif., Ranger Case at Smith Fork, the prisoner at the bar at his home in Grants Pass, Oregon, and the Supervisor's office. It was almost more than the line could bear, and the proceedings were blurred; but the outcome of this phone trial was eminently satisfactory. The offense having been committed in California a $50 fine was imposed; had it been in Oregon he might have drawn only five.--E. H. McDaniels.

Better Utilization of Southern Pine

By R. D. Forbes, Southern Experiment Station

In an effort to discover whether waste wood left in the tops and limbs of felled trees can be used for fuel on logging operations at a reasonable cost, and if not, how such tops can be disposed of to prevent serious fires, Henry E. Hardtner, President of the Urania Lumber Company, announces that he has undertaken a series of experiments on his company's lands. In this work he has the cooperation of Commissioner M. L. Alexander of the State Department of Conservation, and the Southern Forest Experiment Station.

"We find it increasingly difficult to get good wood for our skidder, loader, and dummy engines," said Mr. Hardtner recently, "and I have in late years thought it might be possible to get this wood out of the tops and slash of our logging operations. We are now trying this out on a sample area. Men are being set to work after the skidder and are cording up the tops, down to three or four inches in diameter. If material that would otherwise be left to rot in the woods can be turned into fuel and used at anything like reasonable cost, it will be one of the greatest forest conservation developments in years. Moreover, we feel confident that this process will largely solve another great problem, namely, how to reduce the fearful danger of fires in the slash left by logging.

"In Minnesota and some other States the forestry laws compel lumbermen to pile and burn their slash so as to preserve trees left for seed and prevent destructive fires among young seedlings and saplings. In addition to the area being worked for fuel at Urania, the State and Federal foresters have painstakingly laid out some thirty-five acres on which other ways of handling the tops to prevent fires will be tried out. Careful cost records will be kept of the work. This is the first time such experiments have ever been made in the South. Our woods superintendent, Francis Smith, and all the woods employees of the Urania Lumber Company are helping the foresters to make the project a success."

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An agricultural college staff is experimenting on a cow by feeding her sawdust. When that critter is cut up there ought to be some fine planked steaks for somebody.--Tulsa Tribune.

Service Bulletin
U. S. FOREST SERVICE
(Contents Confidential)

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FOREST SERVICE MEN

What the secret is in the courtesy, cheerfulness and willingness to serve others found in the men in the United States Forest Service I do not know. It has always been a puzzle to me, for it seems strange that there should be no exceptions. But it is true, so far as my experiences go, that every Forest Service man is a pleasant chap. I have met them from all parts of Montana and from other States, even from national headquarters.

The first Forest Ranger I ever met was at the McClellan station southeast of Helena. That was quite a long while ago, and I stopped there on the way home from a hike to inquire about the road. He invited me into his house and made me feel like I was in the home of a friend.

Since then I have met these Rangers in the city and in the woods. A Ranger is a personage of consequence in many communities. He is looked to as a guardian of the law, a champion of rights on the range and in the forest. He is respected as an adviser, as a sage, as a prophet. People come to him with their controversies and often his word is conclusive proof.

If one seeks information, the Forest Ranger is anxious to give it. Anything in timber or range or water that the United States has placed under the administration of the Forest Service he is eager to let one have, provided there is good faith and no attempt to abuse the privilege.

The Forest Ranger can be firm and kind at the same time. When some one has attempted to put one over on Uncle Sam or on a neighbor, the Ranger is on the job. He rides day after day, and when he has to he brings his man into court and the great government of the United States gravely asserts itself.

There must be some unusual doctrine in which the Forest Service men believe. Or what is the explanation?--Montana Record Herald (D-1 Bulletin).

Do Logging Operations Affect Game Conditions?

By Glen A. Smith, D-1

A petition was presented by Lincoln County residents to the Montana legislature last winter, praying for the establishment of a game preserve on Wolf Creek and Fisher River. In the petition it was stated that lumbering had encroached upon the forests in that region to such an extent that the game was rapidly disappearing and that a game preserve in this virgin country wherein game would have complete protection was an absolute necessity to perpetuate the supply and stock the adjacent areas. It seems to be the opinion of most "old-timers" that logging operations are a menace to wild life.

My observations in Montana, covering a period of some 20 years, lead me to believe that the method of slash burning and leaving the logged areas in a denuded condition, which is followed by a majority of lumber operators, is a real menace to wild life. I am firmly convinced, and can cite convincing examples, that if a method of logging and brush disposal that would leave the young growth in a condition to insure a future forest were adopted,

Do Logging Operations Affect Game Conditions? (Cont.)

wild life would be benefited in that through such operations the dense cover would be opened up and a bountiful supply of vegetation would result. Any one who has traversed a logged-over area of any standing that has not been denuded by fire will recall the abundant supply of timothy, red top, clover, willows, raspberries, strawberries, Oregon grapes, serviceberries, all of which add to the natural food of wild life, and with shelter in the form of reproduction, there is little doubt but what game will thrive and multiply.

It seems to me that if this be true, and I am convinced that it is, it adds another strong reason for a campaign against the denuding of the nation's forested areas by present methods of slash burning and destructive logging. Let's enlist the aid of the sportsmen in our campaign for a National Forest policy.

These observations are in direct accord with those recorded in the Lake States where logging occurred 40 and 50 years ago. See George Shira's article in the National Geographic Magazine for August.

Forest Service Estimates Approved

The Bureau of the Budget and the President have approved the 1922 appropriation estimates for the Department of Agriculture. Cuts were made in the Forest Service estimates as follows: acquisition of lands from $1,000,000 to $50,000; forest investigations from $110,000 to $85,000; reconnaissance from $127,000 to $112,000.

All other Forest Service items were approved, including the increase of $160,000 for additional guards and technical assistants; the O & C land grant protection item increased to $35,000 and the new items of $20,000 for training of Forest Rangers; $10,000 for sanitation and protection measures at National Forest camp grounds; and $150,000 for the eradication of timber beetles in southern Oregon.

Colonel Greeley is particularly gratified that the final approval of our estimates includes the provision for the transfer of all Supervisors, Deputies, and Rangers to the miscellaneous roll and consolidates the lump sum items for individual National Forests, together with all other GE and GA appropriations, into nine items--one for each District and one for Washington. This will simplify and facilitate the handling of the various appropriations.

The hearings before the Congressional appropriation committees will probably not be held until after the beginning of the new year.

The White Mountain Forest Has a Fire

By F. W. Reed

It is the unusual that makes news. What is news in one locality is of such common occurrence in other neighborhoods as to be passed by almost unnoticed. In most National Forest regions, a 600-acre fire which was gotten under control within eight hours from the time it was reported and at a cost of less than $1,000 would be lacking in any news value. It would be apt to appear only in the Accumulative Record for the fire season as part of the total acreage burned and the total cost of fighting fire during that season.

Why, then, did the Boston papers give their full front pages with scare headlines to such a fire in the White Mountain National Forest? The answer is simple. It is the first time there has been a fire of any size in that Forest for six years. Therefore, the occurrence was so unusual as to have particularly high news value. This value lay, not in the fact that the fire was put under control within a minimum lapse of time and with maximum efficiency, but in the fact that a fire occurred at all. Because a fire occurred at all on the White Mountain Forest, we have been criticized for being asleep on the job and of lacking preparedness. We got no praise for being on our toes and from preventing the inevitable from being a conflagration.

The lesson is:--No matter how well you do, there will always be some one to say "you ought to have done it better." Perhaps this is good,--it keeps one from becoming swell-headed.

The White Mountain Forest Has a Fire (Cont.)

Another point of interest in connection with this fire: We have been using a Morse-Fairbanks pump on it,--not in getting the fire under control--that was done with the old-fashioned means of men, tools and hard manual labor, but to hold the fire line after it had been established. The pump has been useful in this respect because there was one short stretch of fire line within easy reach of a large creek, which could not be ditched by hand because the terrain consisted of large glacial boulders between which the hollows and crevices were filled with litter and duff which could not be reached or dug out with hand tools. The only way to prevent fire from burning through this duff was to soak it down with water, and here the pump is earning its keep.

Chestnut Blight and Minimum Requirements

By E. F. McCarthy, Appalachian Experiment Station

Chestnut blight has been found recently on Curtis Creek on the east slope of the Blue Ridge near Mount Mitchell. This is the most southerly point of infection known and indicates progress of the disease toward ultimate destruction of chestnut in the Southern Appalachians.

Recent inspection of the older infections through Virginia, while offering no hope of survival of the extensive stands of chestnut, shows that the replacement will take place very gradually and without serious waste of chestnut timber except in regions remote from markets. The Southern Appalachians have too favorable growth conditions to allow openings to remain long unoccupied where chestnut trees have died. The space is quickly filled by associated species, such as chestnut oak, scarlet oak, and several pines. The chief damage done will be the replacement of the rapid growing chestnut species by low grade oaks. Where a sufficient number of valuable species are mixed with chestnut the damage will be minor, but some areas were seen where chestnut comprises 95 per cent of the stand, having sprouted after operations for charcoal and subsequent fires. Replacement of these areas may prove difficult and experiments in planting skidding trails with valuable species to secure their introduction may be desirable.

Montana Coöperative Fire Protection Agreement

By Paul D. Kelleter, Washington

District Forester Morrel this year entered into a new agreement with State Forester McLaughlin of Montana for the extinguishment of fires on State land near or within National Forests.

The agreement affects all lands of the United States and all lands within the Forest boundaries owned and claimed by the State as well as all State lands within three miles of the boundaries of the Missoula, Flathead, Blackfeet, Kootenai, Cabinet, Lolo, and Bitterroot Forests and all State lands within one mile of the boundaries of the Absaroka, Beartooth, Beaverhead, Custer, Deerlodge, Gallatin, Helena, Jefferson, Madison, Sioux, and Lewis and Clark Forests. The agreement does not apply to lands included within the territory of any protective association of which the State is a member.

Under the provisions of this agreement the District Forester will furnish during the fire season as many patrolmen as are available under the existing appropriation, and the State will furnish a proportionate number of patrolmen-firewardens for the land owned or claimed, on the basis of acreage per man, the period of employment for such patrolmen not to exceed four months in any calendar year. The exact period of service to be determined by the District Forester. All patrolmen-firewardens furnished by the State will be selected by it, subject to the approval of the District Forester.

The District Forester undertakes to patrol land owned or claimed by the State within and adjacent to the National Forest with the same care that he provides patrol for the adjacent National Forest land. As far as practicable, the patrolmen furnished by the State will be assigned to areas that contain the largest percentage of lands owned or claimed by the State and where the greatest fire danger exists. The assignment of such State patrolmen and the direction and supervision of their work is lodged in the Forest Supervisor in charge of the respective National Forests. This is done in the interest of efficiency and prevents the duplication of patrol.

Montana Cooperative Fire Protection Agreement (Cont.)

All State patrolmen will be appointed Forest guards in the Forest Service at a salary of $12 per annum, the remainder of the salary to be paid by the State at a rate of not less than $75 per month. Patrolmen so appointed have the same authority to employ means to extinguish a fire as a regular Forest employee.

The costs of fires that occur are prorated between the State and the Federal Government on the basis of area of land involved. Provision is also made that the State and Forest Service furnish to each other without expense the services of such of their employees as are available to fight fire which can not be extinguished by the regular patrol force of the particular District in which the fire occurs.

In order to facilitate the payment of salaries of the guards, the State deposited to the credit of the cooperative fund the sum of $4,000, the estimated amount needed for guard salaries.

Beaverhead Invites Everyone to Take a Bath

By M. H. Wolff, D-1

Evidence that the Forests of California have not the monopoly of recreational sites for cities in their neighborhood is concretely exemplified by the Elk Horn Springs recreation site on the Beaverhead National Forest of Montana.

This site is located about 40 miles from the city of Dillon, 11 of which are on a side road of uncertain quality. Nevertheless, on Labor Day last, some 200 automobiles from the town of Dillon and the surrounding country, brought their heavy cargoes of human freight to attend a barbecue. At one other time in the last year there were as many automobiles at one time at this spot. It is nothing out of the ordinary in the summer season to find as many as fifty automobiles, whose owners are camping, either on week end trips or en tour along the Park to Park Highway, which passes within 11 miles of the Springs. Situated among the pines at an elevation of 7,600 feet it affords the vacation seeker a welcome contrast from the hot, dry, open cattle range country through which the Highway runs for many miles.

The Springs are hot springs containing only slightly distasteful so-called medicinal properties. They are fine to bathe in and get rid of the dust and grime of the long automobile jumps in the dusty valleys.

Fortunately, the Elk Horn Hot Springs is one of the few such springs on the National Forests to which title has been entirely retained by the United States, so that their development is coordinated with the best public welfare. At present there are about fifteen summer home cottages of a high standard, not only in construction but in neatness and tidiness. There is a store of rustic design. And most noteworthy--there is a free public swimming pool erected from public subscriptions, to which the city of Dillon contributed a large share. The far-sighted policies of the Forest Supervisor also have provided ample room for tent campers.

The Beaverhead Chapter of the American Legion contemplates some rather ambitious development under a special use for a memorial park and sanitarium. Some $30,000 is contemplated to be spent in building a sort of summer resting place principally for the invalid members of Beaverhead County, but incidentally for those that are well, as witnessed by the plans which include tennis courts and a baseball diamond. The park will be dedicated in memory of the Beaverhead County men who lost their lives in the World War. This is an ambitious program, but already it has the backing of the State Department of the Legion and the approval also of the American Legion's national headquarters, so that the plan has a very optimistic chance of accomplishment.

FOREST PRODUCTS LABORATORY

Wood Identification: Up on Somish Island in Puget Sound a drill plunging away 125 feet below the channel of a river in which the hole was being sunk encountered buried in the rock strata fragments of wood. Fragments of the wood included two pieces identified as from the white pine group and the third a hardwood, with the fibers too crushed to permit identification. Altogether in

September 345 specimens were received from 23 sources, all of which were named except the one from the drill hole.

The Lab. Mail Bag brings us many queer requests. For instance, recently we received: From Unsankinko, Chosen, (Korea), a letter asking how to prevent rot in mine timbers; from an Ohio implement handle plant asking us to suggest a market for ash shavings and chips; from a Kentucky table manufacturer some samples of veneer panels asking us to analyze the causes of the warp they contained; from a lawyer a request for information on kiln drying for use in a trial; and from another correspondent a request for two pounds of heptane from the California Digger pine.

Eggs from Sawdust: A correspondent in California overstocked with sawdust and hearing doubtless of our experiments in feeding hydrolyzed sawdust to dairy cattle, wants to know if he can extract tannin from his supply and after doing so can the residue be converted into chicken feed. We had to tell him that but few species of wood contained sufficient tannin to pay for its extraction, and in any case the residue would still be to all practical purposes sawdust.

Pulp and Paper recently examined and reported on the papermaking possibilities of "Aninga" fiber from the lower Amazon Basin in Brazil and "Alfas" grass from Tunis, Africa. Long distance travelers these, sent by several large American importers.

DISTRICT 1 - NORTHERN DISTRICT

Wage scales in the logging camps in north Idaho have dropped to a point lower than they have been for a number of years. At the present time lumber companies in the Priest River valley are paying only $2.40 per day with $1.00 board for swampers. The Kaniksu Forest, however, is still maintaining the wage scale for brush pilers at $3.50 per day with $1.35 for board. By paying this rate they are getting a very high grade of men.--E.K.

Compensation Cases: Since May 1, 1921, there have been reported to Operation 61 Compensation for Injury cases, three of which were deaths.

Of the three deaths two were trail laborers on the Bitterroot, who died of poisonous tick bites, the other a Guard on the Kootenai who was drowned while crossing a river.

Mining Claims vs. Special Use: The Secretary of Agriculture has recently transmitted to the Department of Justice a trespass case on the Missoula National Forest, which is of considerable importance in Forest administration. It concretely puts up for adjudication the question of whether a mineral claim, initiated after the issuance of a special use, can be considered as a reason for giving the mineral claim priority over the special use permit.

A letter transmitting the case to the Attorney General says in part: "............persons desiring to develop the mineral resources of forest lands must comply with the rules and regulations governing forest reservations, and it is submitted that when, as in the present case, a permit has been issued under the regulations governing National Forests, conferring upon one person the right of occupancy and use involving a specified tract of land, another person may not legally usurp that right by maintaining exclusive possession of the land under another law of the United States, such possession being based upon a right instituted subsequent to the issuance of the special use permit. It would seem that whatever right the mill site locators may have acquired would necessarily be subject to any prior existing right acquired by the special use permittee so long as the permit remains in force and effect." --M.H.W.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Forester Visits the Lake State Forests: There was a small round-up of Washington and District 2 men in the Lake States during the early part of October, the loadstone of the occasion being the Forester, who, for the first time in some years, was able to spend a little time looking around in the Lake State

DISTRICT 2 ROCKY MOUNTAIN DISTRICT (Cont.)

Forests. Zon and Mitchell represented the Washington office and Peck, McLaren, Thompson, Dahlgren, Schreck, and Marshall were among those present at various times from District 2. While Colonel Greeley's trip was cut shorter than he had intended, we were able to show him some of the Michigan Forest and the planting done by the State on the Higgins Lake State Forest, and he also had a chance to see something of the conditions on the Superior Forest. In addition, a trip was made into the jack pine region in northern Wisconsin. A day was spent studying new developments in intensive utilization being carried on by the Weyerhaeuser people at Cloquet, Minnesota, and to look at some of their cut-over lands near Duluth. One of the subjects of particular interest discussed at considerable length was the advisability of burning brush after logging.

On the Minnesota the party had an encounter with a vicious muskrat, which succeeded in holding up the flivver in the middle of the highway, attacking the tires of the car with the utmost ferocity. After securing a very good photograph of the bandit, he was successfully driven off by a determined attack with large clubs.

New Use for Gas Masks: The War Department gas masks which were tried out on forest fires and found to be unsatisfactory were put to good use recently in a garage fire at Deadwood. Equipped with masks furnished from the Black Hills Forest headquarters, a number of ex-soldiers were able to save five cars, including a badly singed Forest Service truck.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Livestock Conditions: Grazing Examiner Forsling of the Washington office, who has spent several weeks in D-3 reports that in general he has found the stockmen of the southwest terribly hard up and that they are being carried largely by the banks. He has noted that from Montana to New Mexico many automobiles, especially trucks, are now being replaced by mule teams and wagons with a $2 a day man as driver. A large number of sheepmen who, for the past 10 years have been running their herds by telephone, are now out in the hills herding their stock in order to save a herder's wages.

England Wakes Up: Great Britain has gone into the business of growing timber. For a long time she has been a lumber importing country. Prior to the war but 10 per cent of the lumber consumed was home grown. While various individuals and investigating commissions had for many years pointed out the unfortunate effects of this situation, England was content because of the proximity of other wood-growing countries, like Russia, Norway, and Sweden to import from them. The dire necessities of the World War, however, brought home as nothing else could the necessity of having a home supply of timber. Forest products were absolutely indispensable, and in spite of wholesale requisitions on private forested estates, it was impossible to reduce materially the proportion of England's merchant marine engaged in carrying lumber. The impossibility of doing this was one of the big factors in the food shortage in that country. Great Britain has now embarked upon a comprehensive forestry program which it is planned at the end of 40 years will have established sufficient forest, when once under way, to furnish her entire need for forest products during a three-year period and which could be resorted to for this very thing in case of war or other emergency. Fifteen millions of dollars have been appropriated for the next ten years for the acquisition and planting of forest land. 150,000 acres will be planted during this first ten years and the acquisition and planting program will go forward during the succeeding three decades at an increasing rate. Work is already under way and in Great Britain's nurseries to-day there are already nearly two hundred million seedlings and transplants. It is interesting to note that mostly coniferous stock will be used and that two of the principal species are from our own forested regions; namely, Douglas fir and Sitka spruce.

"Vigilance": The American Telephone and Telegraph Company shows exceptional skill in advertising by using all kinds of impressive subject matter in keeping itself continually in the public mind. In the Literary Digest for October 15 appears a half page ad entitled "Vigilance" and the type that inspired the idea appears to be a Forest Service Lookout. The "roost" of a tower is shown in a cut with the Lookout searching the landscape for a "smoke." The text makes no comment about the picture and none is needed. To those who know what real vigilance is, it tells its own tale.

DISTRICT 5 - CALIFORNIA DISTRICT

The Lassen National Forest Headquarters were moved to Red Bluff, California, on October 17.

Some Folks Have Two Vacations: The Eldorado has adopted a novel method of curing the traveling public from writing on Forest Service signs, fire warnings, etc. Supervisor Smith and the Ranger force collected a number of names of people who foolishly left their addresses, and a letter was sent them giving them so many days in which to return to the Forest and erase their names from the sign upon which it had been written. The Eldorado force reports quite a number of parties who had to take a second vacation in order to comply with this requirement. One man was heard to say in a barber shop in Jackson that he had had one vacation already, but was now taking an enforced vacation in order to return to the Carson Pass Summit and rub his name off a sign. In one case a young man appeared at the Ranger Station and asked the Ranger if he had any objection to his going up on the Carson Spur and erasing from a sign a certain young lady's name. She had been notified to take her name off the sign and he had volunteered to see that this was done. One individual who made this enforced trip apparently took pity on a lot of others who had written their names and washed the sign off clean. These names were all written on the old wooden signs. There is absolutely no trouble of this kind with the new metal signs, since it is impossible to write on them.

Noted Writer on Forest: C. V. Brereton is on a trip into the Covelo region in company with Peter B. Kyne, the author of "Cappy Ricks" and many other stories. If this famous author is looking for local color and material for new stories, he certainly should be able to find plenty in the Round Valley region.--California.

Changes in Personnel: Supervisor E. V. Jotter has accepted a position offered him in the Office of Industrial Investigation at Madison, and will leave for his new assignment on October 25. C. E. Jordan will succeed him as Supervisor, but will not be able to get to the Trinity until the first of the year. Deputy Supervisor John R. Gray will take temporary charge of the Trinity as Acting Supervisor.

Ranger Demonstrates Heliograph: Ranger Myers demonstrated the use of the heliograph while attending the Inter-Mountain Fair at McArthur on September 9 and 10. Several messages were sent between McArthur and Soldier Mountain Lookout Station. One old Indian saw the light from the mountain, and told some of the younger ones of the tribe that there were some bad spirits on Soldier Mountain. He was mistaken; the spirits were all at McArthur.--Shasta.

The Sacramento Fair: The Departmental exhibit at the State Fair, including that of the Forest Service, was duly installed and is visited by crowds of people daily. The Departmental Office of Exhibits delayed securing space for the exhibit until almost all available and desirable space had been allotted, with the result that instead of 2,000 sq. ft. of space needed we secured less than half. The result is an extremely crowded and far from satisfactory arrangement. It is hoped that this will demonstrate the necessity for local control, as it is difficult to handle such matters at long range.

The new F. S. background showing the contrast between burned and unburned forest is extremely effective, despite the cramped location, and the comments of the people who view it prove conclusively that it puts its lesson across.--P.J.F.

Ranger Bill Says:

I like to criticize other peoples work, 'cause it takes so little effort.

The D. F. told me he once knew a Forest officer that wrote a report that pleased everybody, but he was too smart to live.

'Pears like when a feller quits the Service we ought to wish him many happy returns.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Eagle Creek Closes Season: The season of 1921 at Eagle Creek Camp Grounds on the Oregon Forest was more successful by 1,828 visitors than in 1920. From usual estimates of one out of every five visitors registering, there were nearly 200,000 visitors at the grounds the past season. Approximately 9,000 visitors camped overnight on the Grounds during the season and over 4,000 hiked up Eagle Creek Trail. The register shows visitors from every State in the Union and from British Columbia, Hawaii, and a few foreign countries. Sunday, August 7, was the banner day; 782 cars were parked on the grounds that night, with over 4,000 visitors that day. That day auto license plates from eleven different States were noted on the Grounds. Only one accident occurred during the season; nothing was reported stolen from cars, nor were any arrests made for damage to property or for disorderly conduct during the season.

Forest Service Completes Lewis River Suspension Bridge: The Lewis River Suspension Bridge, Mt. Adams District, Columbia Forest, has just been completed. The bridge span is 132 feet, width 6 feet, diameter of cables 1¼ inches. The construction of this bridge eliminates a very dangerous ford across upper Lewis River on the Guler - Spirit Lake Trail. It also makes accessible sheep range in the Niggerheads country. Mr. Chris Skaar was foreman in charge of the work.

Pickle Bottles: Tales of fires being started by beer bottles, spontaneous combustion, etc., are frequently related to the unsuspecting Forest officer, but are generally received with skepticism. Forest Guard Will Lessenger, of the Wenatchee, who is soon to graduate into a scaler-ranger on the Rainier, comes forward with the following:

While riding the range with Mr. Vertrees, foreman for Coffin-Babcock Land & Livestock Co., he found where a small fire had started and burned out because of nothing to feed on. The apparent cause was an innocent empty pickle bottle. The fire had burned a circle about a foot and a half in diameter with a narrow stringer running out about 3 feet. There was a bubble in the glass of the bottle which he took to be the "nigger in the wood pile."

CANS-G-1: All Washington and Oregon Supervisors were recently appointed Deputy State Health Officers. The Morning Olympian of Olympia of July 23 carried a news note relating thereto, with this odorous headline: "Fromme to Raid The Garbage Cans."

DISTRICT 7 - EASTERN DISTRICT

A Gift from Canada: Ten head of antelope, the gift of the Canadian Government to the American Bison Society, and donated to the Forest Service, have arrived on the Wichita Game Preserve to bear company with the one lone animal for whom we have been trying to find a mate so long.

These animals were shipped from Brooks Station, Alberta, Canada, and were in excellent condition, having come through without a single animal being lamed or bruised. There are three males and seven females in the herd, and Supervisor Rush says they are the finest specimens he has ever seen. They were liberated in a small field on Turkey Creek where the range is good and where some rye has been sowed for winter pasture.

Mr. Blaizer, in charge of the Canadian herd, came down to the Wichita with the animals, and much credit is due him for making it possible for the Canadian Government to send out these animals for restocking game preserves.

He Wasn't Much Help: On October 9 Assistant Ranger Foltz of the Shenandoah National Forest sighted a fire on land owned by the Orkney Springs Company, adjoining the Forest. He went to the fire immediately, picking up a crew on the way, and by night had it under control.

Leaving a patrolman on guard, he began to investigate some curious antics the fire had displayed in crossing the line and found that one of the crew being three or four "sheets to the wind" had been facetiously setting fire over the held line.

This he reported to Ranger Wood in charge of the district, who succeeded in getting sufficient evidence to procure a warrant, as a result of which on October 11 one Ashby Fansler decided to plead guilty, and the magistrate let him off with a fine of $40.00 and costs amounting to $5.75.

Service Bulletin

U. S. FOREST SERVICE

(Contents Confidential)

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Another Bugaboo Laid Away

By Louis S. Murphy, Washington

It is doubted if the Olympic "blowdown" has been more a source of worriment the past season because of its serious fire possibilities than has the East Branch of the Pemigewasset River, New Hampshire. It has indeed been a byword for years among those who have known its condition that "If a fire ever gets started in the Henrys' old cuttings, nothing can save the whole East Branch." But a fire has occurred and the East Branch been saved in what is generally regarded as the driest year in two decades.

The watershed is 50,000 acres or more in area, steep sided, and clothed on its upper slopes with a dense stand of spruce and fir and lower down these same species mixed with northern hardwoods. Lumbering has been going on here for nearly 50 years. Only in the last two decades, however, has forest devastation been practiced. These later cuttings have taken the forest growth practically clean. Slash is strewn over the area from top to bottom in windrows higher than a man's head. Fire obviously would destroy the forest possibilities of this area for no one knows how long.

The area is traversed by a north trail and a south trail, both well up on the slopes, diverging from a central point and then roughly paralleling each other but several miles apart with a logging railroad in the valley bottom almost midway between. A patrolman of the timberland owners' association has his headquarters in the valley toward the north end. A National Forest district ranger headquarters is down river, just outside the area, National Forest land comprising its rim. Two State lookout stations overlook the watershed.

At 8 o'clock on a morning in mid-September, the Carrigan Lookout made out a thin column of smoke rising between the railroad and the northerly one of the two trails. In the absence of direct telephone connections the fire call had to be routed around a distance of more than 100 miles and was not received by the company operating in the area until 8:45 a.m. A dozen men were hastily gotten together by the superintendent of the pulp mill and taken with necessary supplies on a gasoline car to the end of the railroad and were on the fire before 10 o'clock. A reconnaissance of the fire indicated the necessity for a much larger crew, and, returning to headquarters, a train was made up and 70 additional men were taken out of the pulp mill. Later these men were in part replaced and in part reinforced by woodsmen brought by special train from the company's nearest camps in another valley 25 or 30 miles distant. With this force the fire was that afternoon brought completely under control after covering an area of about 200 acres. That night a shower made it possible to dispense entirely even with patrolmen.

Carrigan Lookout clearly saved the day in this case. The association patrolman had gone up the north trail and his view into the particular part of the area where the fire started was obscured by an intervening ridge until 10 o'clock when he first saw the smoke. The district ranger was entirely out of the country, having been withdrawn on other work. The second lookout did not get the smoke of the fire till noon, due also to high intervening country.

Another Bugaboo Laid Away (Cont.)

Evidently one or more persons had strayed off the northerly trail and camped on the side of the valley when night came on, and had left their breakfast fire unextinguished since, except for such person or persons, no one was in the entire valley.

Thus, so long as we can get prompt and vigorous action in getting to the fire early and staying with it, we need have little fear of a bad conflagration even in our East Branches and Olympic blowdowns. But the time for such preparations is clearly beforehand.

Breaking the Big Boys at the Laboratory

By Edward P. Ancona, Forest Products Laboratory

"Sounds just like chewing into a chocolate covered piece of taffy," said the engineer in forest products. The Washington office man gave a sigh--"And I lost two-bits on the sound. If it had come about 30,000 pounds sooner I'd break even on to-day's five dollar allowance. Take the pot, Heim." And Heim collected.

The Laboratory's million pound machine had just quietly and efficiently clamped down on a big 12 x 12 southern longleaf timber 12 feet long and crushed it endways about as easy as one would snap a match stick. Somehow, it was a more or less thrilling process to watch. When all was set, the staccato calls of the man at the wheel applying theopressure mingled with the hum of the tiny ten horse motor furnishing the power; the intense study of the deflection in the beam by a man on an elevated platform, squinting through a transit; the recording of readings of deflection and pressure by a third man; and the massive timber itself upright between the jaws of the machine slowly but invisibly yielding to the unbelievable pressure--all made a scene not foun in everyone's back yard.

"Fifty-thousand" called the Lab. aid at the wheel, as he gave it a whirl at the start and threw in the gears by means of a great lever sticking through the floor. A long slender beam slid upward, came to rest and slowly came back to balance; another whirl of the wheel, a dial registered a new reading, the beam again went up. "Sixty-thousand" sang out the aid.

By tens of thousand pounds the pressure climbed. Two monster screws, extending from the floor to the top of the tower in which the machine is housed, turned slowly--so slowly that the eye could barely note the movement. But irresistibly nevertheless, for at about 500,000 pounds tiny seams could be seen opening in the surface of the beam in the vicinity of a knot about half way up its height. Even under this great pressure the beam was bent less than an inch out of line.

The tiny cracks opened wider, the motor droned monotonously, the readings went up to dizzy heights--six hundred thousand, six hundred thousand ten, twenty, up - up - and then -

"Hold her, easy, she's going, she's gone!" from the engineer in charge of the test.

A soft, squashy sound, not audible twenty feet from the beam, and a small ridge suddenly appearing across the face of the timber near the fatal knot told tle story of the final yielding of the tortured fibers where they had slipped across each other.

"Six-hundred-eighty thousand" concluded the aid, throwing in reverse.

"That clear beam out there went 19,000 pounds better," said the engineer, "but the knot doubtless helped to reduce the resistance of this one. Both of them green. We have some similar beams air drying. Take about four years seasoning, we expect, then come around and watch the splinters fly. They don't give up quite so easy when dry, nor break so peacefully."

The Washington office chap being an inquisitive sort wanted to see "what makes her go," so through a trap door in the base of the tower we went. There, behind the scenes, in a cavelike room, were all the essentials for converting ten horses power into a million pounds of pressure. Of course, you've guessed it--merely a matter of gears--a room full of 'em. High, low, intermediate, reverse, and several more--got a Ford skinned hollow for gears. And the slowest of all, we were told, running 24 hours a day, would require 20 days for the screws to run the upper jaw down to meet the stationary lower jaw at ground level.

"That about has the snail out-snailed," remarked the Washington person--but his voice sounded a bit remorseful. He was still thinking of his two-bits. You see, he guessed the timber would fail at 638 thousand. Trying to beat us at our own game!

The Redwood

By E. N. Munns, D-5

California has long been known as the region of "the most wonderful things in creation," and to many these have appeared so wonderful as to be mythical. But among its actual wonders is the redwood of rather isolated and restricted distribution. Its big sister, the Sequoia, has been well advertised as the oldest and largest living thing in creation, and it has been generally understood that the redwood is of equal size and equal age. This is not true, for the redwood does not grow to as large a size in diameter--although perhaps taller. Diameters of as much as 25 feet are rare, while heights of over 250 feet are common.

Studies have shown that the Sequoia reaches ages of over 3,000 years, and this age is ascribed indiscriminately to the redwoods as well, but incorrectly so. Large size in the redwoods does not indicate correspondingly great age, but a rapid growth which is almost unbelievable to the uninitiated. Studies this past year on logged-off areas show that the trees fall into several age groups with approximately 400 years or so between them. Thus, the youngest group consists of trees about 400 years old; the next older appears to be a group about 800 years old, while the third class is about 1,200 years or so of age. There may be an occasional veteran of 1,500 years in the stand, but he is exceedingly rare.

(Incidentally, the bald cypress, a former close relative and ancient neighbor in the far North, reaches maximum ages of 800 to 1,200 years, occasionally up to 1,600, and maximum diameters mostly from 8 to 12 feet.--W.R.M.)

It was found in these stands, that there were approximately ratios of around 46 trees of the youngest age to one tree of the next older class, and about 191 trees of the first class to one of the third age class. Such ratios and such uniformity in ages in those various stands can only mean that the average life of the tree is around 400 years, and that when this maturity is reached a catastrophe which wipes out the stand occurs, leaving only a few of the older trees as a nucleus for a new crop, and in the second of these catastrophes, there are a few trees which escape from the third class.

What this agency is is open to conjecture, but the appearance of fire scars on the older trees and its absence from the younger ones leads us to believe in fire as the destroying enemy. Many of these hold-overs of one or two generations back are hollowed out by fire to such an extent that the first 100 feet of stem is but a shell and called locally a "goose pen." The common occurrence of these hollowed trees makes the exact determination of age rather questionable.

Growth is exceedingly rapid and three or four rings per inch is the common occurrence in trees up to 10 and 12 feet in diameter. Many trees that at first sight were adjudged to be at least 1,000 years old were only in their third or fourth century, and trees five and six feet in diameter, which if in the pine region would be 300 or 400 years old, were only 150 or 200 years. Of course, such trees were the fastest growing and thriftiest of the stand, but the average trees, because of the available moisture and the high humidities prevailing is not far behind the dominants.

The Dove a Forest Devastator

"The voice of the turtle is heard in the land," to the distress of California timber owners and lumber manufacturers, orchardists and ranchers, according to a unique indictment brought by them this week against the wood dove and some of his feathered fellows. They are charged with being more or less directly responsible for some, if not a large part, of the many forest fires that have raged in this State, in the southern part especially, during the last few months. The indictment is based on this theory:

The Dove a Forest Devastator (Cont.)

Doves, larks, quail and other birds destroy no inconsiderable quantities of fruit and grain. To discourage the feathered pests phosphorus is slyly administered to them. The birds die, their bodies decompose, the phosphorus is liberated, it smolders and sets fire to underbrush, and fire spreads to the forests.

The indictment is regarded seriously and is to be the subject of early investigation by State authorities.--American Lumberman.

Service Should Insist on Closer Utilization of Timber

By Huber C. Hilton, Medicine Bow

Since a uniform policy has now been agreed upon in Districts Two and Four requiring the removal of sawlog timber in tie sales, steps to require complete utilization of the tops are believed advisable and justified. Such utilization can be secured through the making of street car or mine ties and mine props. There is, at least in the Medicine Bow region, a limited demand and at present a growing demand for these classes of material comparable to the demand for the lumber produced from lodgepole pine sawlogs.

If the proposed specifications of the Union Pacific Railroad are used in guiding the marking of timber and the grading of ties on the landings, it is doubtful if the Forest Service can justify the sale of its timber unless props and small ties are made from the tops, since no timber of regular shape less than 9-3/4 inches in diameter at the small end, can be made into the proposed accepted grade of ties.

It does not seem that the Forest Service can afford to leave the large amount of material in the tops which would otherwise result, since in fact, the size of these tops would equal the size of timber being cut under sales in some of the eastern Forests. Similarly special attention might profitably be given to provide for the issuance of free use for material left in tops or on sale areas whereby this material may be secured prior to the actual closing of the sale and the closing up of the roads on the sale area.

In the efforts of the Forest Service to interest the nation in a definite forest policy, it seems scarcely consistent to allow the leaving of the large amount of material in tops which resulted from our strictly tie sales even under the old and more favorable specifications. The time has arrived when the Forest Service may well afford to hold its timber for complete utilization, even though it is now mature and some of it overmature. It is scarcely likely that the loss of overmature timber in a stand over a period of a few years would anywhere near equal the loss in material left in the tops. It is also certain that any policy whereby a large amount of material is left in the woods will ultimately cause the Forest Service considerable criticism. Already eastern visitors to the western Forests are criticizing us for the material left in the tops. The future of the Forest Service is dependent on public opinion. The time seems ripe to strictly require as complete utilization as is possible for the products being made locally. Even now props 12 inches in diameter at the large end are sold. It is reasonable then to believ that props from 9½ to 9¾ inches in diameter at the large end can be made and disposed of even if the market for mine or street car ties is now limited.

Knee Pants and Yodeling for Sheepherders

Objections to grazing as allegedly inimical to the tourist business would be overcome if sheepherders were called shepherds, attired in knee breeches and taught to yodel, was the declaration of Grazing Examiner Jack Horton, speaking before the Bend Commercial Club regarding the warning given here last summer by Walter Prichard Eaton that the continuation of the shee industry on a large scale would result in tourists giving Central Oregon a wide berth. Horton pointed out that grazing has been carried on intensively in the Alps for years, with no loss of tourist trade.--The Telegram, Portland, Ore.

WASHINGTON NOTES

American Forestry Data for Russia: The International Committee of the Y.M.C.A is preparing in Russian form in Russia a series of the books on various technical and scientific subjects. One of these series is entitled the "Technology of Wood." It consists of a free translation of the following well known forest publications:

Bryant's "Logging"
Tiemann's "Kiln Drying of Lumber"
Weiss' "The Preservation of Structural Timber"
Seerey's "Small Sawmills, Their Equipment, Construction
and Operation"
Department Bulletin 718
Bentley's "Methods of Determining the Value of Timber in the
Farm Woodlot"
Thompson's articles on Clearing Land

Mr. Rafael Zon is editing the forest series for the Y. M. C. A.

Our Medal of Honor Man: Assistant Forester Will C. Barnes is, as far as is known, the only member of the Forest Service who holds a Congressional Medal of Honor, which he won in the Apache Indian wars in Arizona. Mr. Barnes has recently been appointed by Governor Merritt C. Mechem of New Mexico to represent the State as her Medal of Honor man at the burial ceremonies of the "Unknown Soldier" to be held at Arlington National Cemetery on November 11. In making this appointment Governor Mecham says: "I am informed that you are the only citizen of this state honored with a Congressional medal, and we are proud to be able to have you represent us on this great national and patriotic occasion."

Assistant Forester Herbert A. Smith left on October 22 for an inspection trip of the Western Districts.

Another Good Grazing Man Promoted: Phoenix, Arizona, papers received here recently announce the coming marriage of Mr. William R. Chapline, Jr., of the Branch of Grazing in the Washington office, to Miss Eva Behn of that distant city.

For several years past the Branch has been enforcing (or trying to enforce) a regulation for the Washington office to the effect that applications for permits to contract matrimony filed by any member of the office would be instantly disapproved and considered as null and void if the event took place before the expiration of a 10-year probationary period of service in the Branch.

It is well to announce that by the time the happy event is pulled off early in December the groom will have completed his 10-year probationary service. The wedding, therefore, meets with the full approval of the Chief of Branch and the application is approved and permit will be issued for a period of not less than 50 years.

FOREST PRODUCTS LABORATORY

This Firm Has Its Own Sorrows: "We used a 7/8 5-ply quarter sawed oak panel for a top on one of our office desks and about two months ago some kind of beetle bored through the top of the table from the inside... Since that time other holes have been bored in this same panel and in different places in the factory... We do not care so much what this animal is called, where he came from nor where he is going, but we would like to know if there is any treatment we can give our stock of panels which will kill these grubs which develop into beetles."

We suggested heating these panels to 145° in a 50 per cent humidity for several hours, since this sort of rough treatment puts the finishing touches at least to the red-headed ash borer that works similarly to this oak chap.

After Reading This, We Would not Trade Jobs with Anyone: No field of human endeavor is more fascinating than scientific research. There is more romance and adventure in a scientific laboratory than there is in the unexplored wilds of the Amazon. It is simply a different kind of exploration with a far greater chance of making a discovery. The research worker is always laboring on the border line of the unknown; he is always confronted with mystery. At any moment he may make a discovery, just as the explorer in unknown lands may brush aside the bushes on a hill top or mountain side and gaze out over a new lake with gold-speckled shores glistening in the blistering sunlight. There is a peculiar lure in research--a subtle expectancy that may at any moment be satisfied with realization. This striking off into the depths of the unknown causes the blood to tingle and fills one's life with an insatiable desire to penetrate the blackness of the unknown.--Scientific American, Oct. 1, 1921.

DISTRICT 1 - NORTHERN DISTRICT

Tie Service Records: A recent inspection of the Northern Pacific test track near Plains, Montana, shows that after 14.5 years of service only 26 per cent of the ties treated with zinc chloride have been removed. The untreated Douglas fir and larch ties which were laid in each series for comparison had all been removed from the track by 1916 and eliminated from the test. An average life of 7.71 years was shown for Douglas fir untreated, and 7.78 years for the untreated western larch.

Records covering thousands of ties in many states show that where from 1 to 20 per cent of treated ties have been removed on account of decay, the renewals of untreated ties of the same woods have been from 70 to 100 per cent. Where certain untreated ties had a life of from 2 to 6 years, treated ties of the same wood are still in use after 20 years of service. Up to the present time, renewals of treated ties in the N. P. test track at Plains have been due to causes other than decay. A considerable number had been burned by cinders, or were badly checked or split. The point to be emphasized is that in the long run, the untreated tie is the most expensive; and yet only slightly more than one-fourth of the ties used in this country are treated.--C.N.W.

Stubbed Telephone Line Renders Efficient Service: Creosoted lodgepole pine stubs were used in reenforcing sixteen miles of the Choteau-Ear Mountain telephone line in 1917. The first inspection of this project was made by R. B. Adams, Telephone Engineer, and C. N. Whitney of the Products Office, on October 9, 1921. The stubs were found to be in perfect condition after four years of service and no money has been expended on the maintenance of the stubbed portion of the line during that time. The poles originally set were of untreated lodgepole and Douglas fir. After these had been in use five years the line was in very bad shape and to put it in serviceable condition the plan of reenforcing with treated lodgepole pine stubs was decided upon. The Mountain States Telephone and Telegraph Company is much interested in the results shown in this experimental line. The General Plant Manager has now asked to be furnished with all the information which we have both as to the method of treatment, the method of attaching the stubs to the poles, and comparative data as to the life of the stubs and poles.

The success which has attended the use of lodgepole pine stubs in the Choteau-Ear Mountain line may be the entering wedge which will help to create a general demand for telephone poles and stubs of this species.--C.N.Whitney.

Ranger Bill Says:

I'm sure goin' to make some of these new technical men sit up an' take notice when I get my service stripes.

"I see you've cut down your horse feed allotment for next year more'n half," remarked Super. Jim t'other day while we was changin' tires.

Some fellers go after jobs; some has jobs thrust on 'em; but most of us ain't got the nerve to let loose from Uncle Sam's pay check.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

What,--Again? Supervisor Jeffers of the Uncompahgre who, a short time ago, decided to take a teaching position at Ames, Iowa, and then changed his mind, has reverted to his original decision and will leave the Service on November 25.

Supervisor John W. Spencer of the Battlement will leave for Washington about December 1 to assist in marking the Ranger examination papers.

State Lodge Burns: The $100,000 lodge built by the State of South Dakota on its game preserve, adjacent to the Harney National Forest, for use as headquarters for the game warden and also with limited hotel facilities, is reported to have burned to the ground on October 18, the fire having been caused by defective furnace connections.

Quick Get-Away to a Fire: We view with alarm the growing number of Baron Munchausen tales about quick-get-aways on fires and so on; but have become so demoralized as to wish to enter the list ourselves with the story of a Ranger on the Bighorn Forest who, upon sighting a smoke, rode horseback 4 miles in 20 minutes and succeeded in keeping the fire within Class A dimensions. We set this up as a record for others to equal or surpass if they can.

The Colorado State Forestry Association met on the anniversary of President Roosevelt's birth, October 27, and perfected an organization. Speeches were made by Assistant Forester Herbert A. Smith, District Forester Allen S. Peck, and State Forester W. J. Morrill, pointing out the field of operations for such a State organization. Officers elected were: President, Lou D. Sweet of Denver, Secretary-Treasurer, Alvin T. Steinel. The enthusiasm displayed at this meeting augurs well for the success of the movement.

DISTRICT 3 - SOUTHWESTERN DISTRICT

The Fire Conference: The Forester has approved the selection of Supervisor E. G. Miller of the Coconino and Scaler Walter J. Perry of the Carson to attend the Service fire conference which will be held at Mather Field, California, beginning November 14. District officers directly connected with fire work will also attend.

Interfere with Traffic: A Manzano Ranger reports a game violation. A certain citizen, it is alleged, killed a deer too early. Mr. Ranger and another Deputy Game Warden routed Mr. Violator out of bed and took him before the U. S. Commissioner, where Mr. Violator, supported by three witnesses, made affidavit that he was hauling beans in a motor truck at night; that as he turned into the main road from a field a deer got in the way and was run over before he could stop the truck; in fact, the truck ran fifty to seventy-five yards before it was stopped. One headlight of the truck was broken out and about $25.00 worth of other damages sustained. The Ranger and Warden were taken to view the deer and found it to be as stated. The truck showed the signs of collision, as did the bruised meat of the deer, which was rendered almost unusable.

The New Manzano Supervisor: Mr. Kenner C. Kartchner has been chosen as the next Supervisor of the Manzano National Forest. Mr. Kartchner, through his long experience as Ranger on the Sitgreaves and Deputy on the Sitgreaves, Coconino and Lincoln comes to the Manzano well fitted to make a big success of his new assignment.

David Douglas: When we see the mighty giants of the woods and call them by their names, it is likely very seldom that we give a thought to the incidents concerning their discovery or to the lives of the persons who designated them. David Douglas, who furnished to the tree what is now known as Pseudotsuga taxifolia its common name Douglas spruce or Douglas fir, was born at Scone, Perthshire, Scotland, in 1798. For three hundred years, from 1153 to 1488, the little village of Scone was famous because it was the coronation place for the Scottish kings. Douglas was educated for a botanist and became a traveler. In 1823, at the age of 25, he visited the United States in behalf of the

Royal Horticultural Society and worked as a collector all the way across the continent. He reached the Pacific Coast in 1824 and in the following year arrived at Fort Vancouver. It was on this scientifically fruitful journey that he brought into prominence the tree that has so lastingly born his name. Although, botanically, the species is now known as Pseudotsuga taxifolia by the best authorities and does not include a direct reference to Douglas, the common name will always commemorate him. He lived for another five years in California and British Columbia and in 1834 he visited what are now known as the Hawaiian Islands, where he died from wounds inflicted by an infuriated bull. His body was returned to Scotland and buried near his birthplace. David Douglas introduced into botany more than 150 specimens of trees and plants indigenous to America.

Lightning a Computable Factor: Lightning may not strike twice in the same place, but 5 years of statistics for this District pin lightning down to a fairly regular attitude in one respect, that of the yearly number of fires from this cause. As shown by this table, in 1916 there were 201 lightning fires, in 1919, 191 and in 1920, 197. In three years out of five there was a variation of but ten fires.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

To Count Stock as They Leave the Forest: In addition to a number of other methods used to ascertain the number of stock on allotments, especially to discover whether anyone is exceeding his permit, several Forests are this fall arranging to count cattle as they come off the range. In certain cases it is believed this is going to be one of the best ways of checking up on the exceeding of cattle permits. It is true that the check will not be made until the cattle are leaving the Forest and therefore until the trespass is ending; nevertheless, if we can get good evidence of the exceeding of permits, the remedy will not be difficult, since reduction or revocation will be adequate.

The Ashley Has Some Wonderful Scenery: The Ashley Forest also has wonders only lacking a versatile press agent to put them on the scenic map. For example, King's Peak, the highest mountain in the State can be scaled in a half hour from the nearest point on the Rock Creek-Uinta inter-forest trail, now nearing completion. The pass itself on the trail has an elevation of nearly 13,000 feet and within a six mile radius are nine peaks over that elevation. Until the completion of this trail the ascent of King's Peak was very difficult and probably not more than fifty people have climbed to its summit to date, about half that number being in the past summer. Included in the number making the climb this year were two women from New York and an eleven-year-old boy, the son of a Salt Lake doctor.

Better Times Coming for the Ranger: Anybody who wants to know how we will control fire in the future, should go by a news stand and look at the cover of the "Illustrated World" for November. It is so plain that you wouldn't have to even buy the magazine. In the foreground stand two highly excited Forest Guards upon a high crag, while on the opposite slope from them a violent conflagration is in progress working down the slope and against the wind very rapidly to all appearances. But they have no cause for alarm, for in the bottom of the valley is a very high steel tower with a couple of Rangers on the top. Radiating out from the base of this tower in several directions are large beautiful red pipes. Those nearest to the fire are squirting forth great geysers at frequent intervals. The idea is plainly to divide the forest into little squares by these water pipes and when a fire starts anywhere, to hem it in with a string of geysers from these pipes. It is easy to see that the Ranger of the future is going to have something pretty soft, but it is doubtful if there is any hope of expecting it for as much as two years, anyway.

DISTRICT 5 - CALIFORNIA DISTRICT

Superintendent of Palisades Park A Visitor: Major Welch, Superintendent of the Palisades Interstate Park, which stretches up the west shore of the Hudson for a distance of 50 miles above New York City, was an office visitor this week. Some $14,000,000 has already been expended in the acquisition of lands for this Park and in construction of improvements. When it comes to recreation problems this Park certainly has one. Last year there were over four million visitors and the restaurants and cafeteria frequently feed as many as fifty thousand people a day. We got a lot of good information from Major Welch along the line of recreation improvements.

New Industry on Modoc: For almost ten years scouts from the different pencil manufacturing companies have been visiting the Modoc Forest with a view to determining the possibilities of Western Juniper (Juniperus occidentalis) for pencil wood. There are approximately 15 townships of juniper woodland in one body on the Modoc, all of which, however, are located on the Devil's Garden--the name of which tells its own story when it comes to a logging proposition.

Recently G. S. Thurman, representing the California Cedar Products Co., Stockton, Calif., with two of the Company's wood experts, visited the juniper area in company with Supervisor Durbin. Their decision was unanimous--that juniper was admirably adapted to the manufacture of pencils and an excellent substitute for southern cedar, the only drawbacks to operating on a large scale being transportation to manufacturing points and the utilization of that part of the tree not used for pencil blocks. The latter objection was overcome by Supervisor Durbin by pointing out that the balance of the tree be worked into cordwood, of which product there is always a scarcity in Alturas and vicinity. The matter has gone so far into the experimental stage that Mr. Durbin has contracted with a woodcutter (a former District Ranger) to furnish a carload of 4-foot pencil blocks cut from the ordinary juniper now being utilized only for cordwood, and this car will be on its way within a very short time. The company has forwarded a liberal check to cover experimental costs and if the proposition pans out as it promises to do, a new industry, possibly of considerable proportions, will be added to the Modoc region.

A Thrilling Experience! On September 22, Guard Benjamin Harrison had quite an experience. A man came to the station and said there was a fire burning about 3 miles south of Mt. Hebron. Harrison went there, but could not find any fire. Coming back near Jerome he saw a small camp fire about fifty yards from the road. He left his auto and saw two men put out the fire and run into the brush. He thought something was up, and stayed until nearly twelve o'clock. He started home, and had gone a short distance when two men jumped from the side of the road and ordered him to stop. He did not stop, but went faster. They tried to jump on the running board, and a small dog Harrison had with him grabbed one and he fell on the left fender. The other one got on, but Harrison hit him and he fell and one hind wheel ran over him. He had gone about one hundred feet when he heard two shots, probably fired at the dog, but both he and the dog came through without a scratch. Harrison learned next day that six men had escaped from the Klamath Falls jail. Likely this pair were some of the escaped.--Shasta.

DISTRICT 6 - NORTH PACIFIC DISTRICT

An Unusual and Interesting Souvenir of the operations of the forestry engineers in France is in the possession of Maj. John D. Guthrie. The souvenir is a box or humidor made from the first board sawn by the first of the 20,000-foot American sawmills to start cutting war timber in France. The wood is maritime pine (Pinus pinaster) found throughout southwest France in extensive forests largely as the result of planting by French foresters.

"Tailor-Mades": Ranger M. e District on the Siskiyou has this to say about fires and such:--"In spite of the prevalent dryness we have had a constant deluge which we can ill afford to consider unimportant. I refer to the deluge of hunters, fisherman and campers that has flooded this district. We love to see these city dwellers getting back to nature and permitting their souls to expand amidst the vast solitudes of our beautifully wooded hills, but we look out over these acres of fir, pine and cedar every time we see a match flash to light the deadly "Tailor-made," and whisper to the myriad examples of splendid tree-hood that old Army ditty; 'Ashes to ashes and dust to dust, if the Camels don't get you the Fatimas must'."

Kiwanis Honors Forest Officers: The Baker, Ore., Kiwanis recently elected Supervisor R. M. Evans as president. The Olympia, Wash., Kiwanis have appointed Supervisor R. L. Fromme to several committees and sent him recently as a delegate to a Pacific Coast meeting of Kiwanis Clubs at Victoria, B. C.

A State Policy for Washington: A forestry conference was held in Seattle on October 21 that may be productive of far-reaching results. Dean Hugo Winkenwerder of the Forest School called the meeting, which was held under the auspices of the Development Bureau of the State Chamber of Commerce. Representative lumbermen, forest school professors and science and economics professors, the State Forester, the District Forester, State Fire Protection Association, Western Forestry and Conservation Association, State Tax Commission, State Chamber of Commerce and the Forest Service were represented at this meeting. The purpose of the conference was to lay the foundation for a State forestry policy, the legislative details of which are to be formulated and presented to the State Legislature which meets in 1922. The results of this initial meeting were most encouraging.--J.D.G.

Growth in Western Larch

Larch is ordinarily considered a very slow-growing tree, but on certain favorable sites the growth has been found to be very rapid.

During the month of May, 1921, the writers were on the Kootenai National Forest doing sample marking on a couple of sale areas. We had occasion to examine the rate of growth in both mature and immature stands.

One of the sale areas on which sample marking was done was Canyon Creek, a logging chance containing some 25 to 30 million feet and purchased by the Baird-Harper Lumber Company. A railroad grade has been constructed from the Cripple Horse Creek main line to Canyon Creek. This railroad runs a portion of the way through a stand of young, vigorous, rapidly-growing timber. The ties for the railroad were cut from this young timber. Upon examination it was found that the young timber was from 37 to 43 years old at the stump cut. Larch trees were found to contain 5 to 6 ties at an age of 37 years. One tree was found which was 18 inches in diameter and contained 7 ties at an age of 43 years at the stump cut.

The railroad runs through one corner or side of a homesteader's ranch. The homesteader cut and delivered 1,000 ties on the right of way from this young stand of timber. The matter of growth was discussed with the homesteader and he agreed that the young timber would be worth more to him, if properly protected, than the land would be for agricultural purposes. He is piling and burning the brush from the tie cuttings and claims that he is going to practice forestry on all of his claim except about 20 acres along an alder bottom, which will be put to agricultural use.

The Kootenai Forest contains thousands of acres of the type of stand described above,--larch, yellow pine and white pine. Permanent sample plots in such areas, for the purpose of obtaining reliable data on growth, are badly needed.

The State also has several thousand acres of very valuable advance growth intermingled with National Forest lands in this region. This young growth, instead of being protected, is being destroyed by broadcast burning as soon as the mature timber is removed. The destruction of this kind of material is a most unfortunate and preventable waste of one of our most important but rapidly-disappearing resources. If such matters as this are forcefully presented to the State officials, it is believed that the necessary legislation probably can be obtained to make possible a sane State forestry policy.--James W. Girard, W. C. Lowdermilk--D-1.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

Vol. V, No. 40. Washington, D. C. November 14, 1921.

Helping Your Boss Make Good

By Helen E. Williams, D-3

Much attention is given in daily and weekly bulletins to improvement of ranger work, efficiency in conducting the various Forests or forest operations, but to the writer's knowledge little or no attention is paid to the clerical force. We are doubtless supposed to function, like the bodily organs, in silence and without special training.

Early in the writer's life two incidents which were called to her attention made a forcible impression upon her:

(1) One of the most able and brilliant geologists, a professor in a large university, a Government specialist in underground water investigation, was asked to locate the best site for a well on the property of a certain business man, himself self-made. The negotiations came to a sudden stop, when one of the geologist's communications contained a glaring error in spelling. The client explained that if a teacher in a great educational institution, appointed to instruct young people, could spell no better than this he was not a reliable consultant on the subject of underground water.

(2) A well-trained woman was sent out from London by a large business firm to serve in a secretarial capacity in their Rio Janeiro office. After several months they told her regretfully that they must dispense with her services, since it was quite evident she would never grow up to her position. Pressed for something more definite, they mentioned as an indication of her inability, that though she had been in their office many months she had never learned to spell "cheque" correctly, this being the form which that firm preferred.

Forms of spelling and English usage vary with people and countries; one person's taste dictates his usage; the next may prefer something quite different. But there are forms and usages which all agree are incorrect or inadvisable. Manuscripts, reports, and letters passing through the writer's hands from time to time have caused her to spend considerable time wondering if the average stenographer in the Service considers her limit of achievement reached when she has passed the Civil Service examinations. Do all of us know (1) the proper usage for abbreviations; (2) when and when not to hyphenate compound words; (3) the right punctuation to bring out the clearest meaning of the words used; (4) the right division of words at the end of a typewritten line; (5) when and where to use the troublesome adverb "only"; (6) the advantageous use of the semicolon, the colon, the parenthesis? Of course there are other things, but these are the matters where most uncertainty seems to exist.

English and spelling are as certainly the tools of our trade as the typewriter or the adding machine. Should not every one of us endeavor to use them rightly, not only for our own credit, but for the assistance to, and honor of her employer. A man at the head of his profession, perhaps self-taught and trained, may be absolutely the "last word" in his own line of work; he probably has never given much attention to the fine points of language; he may convey his idea clearly or blindly, according to the degree of efficiency in speech with which he has been endowed. But isn't it the part of every stenographer to so perfect herself in the use of these tools of her profession, that the most imperfect utterance of the

Making Your Boss Make Good (Cont.)

dictator may reach his public or his correspondent so clearly and perfectly pictured that the most casual reader will at once yield the mind back of the work its honest due?

Preservation of Virgin Forest Areas

By G. A. Pearson, Fort Valley Exp. Station

In the July 4 issue of the Bulletin, Munns of District 5 makes an appeal which should be heard throughout the Service. We should preserve representative areas of virgin forest in the interest of future generations.

The plan obviously would have great educational value. Boys and girls, as they come along, could behold what manner of forest covered much of the country in the days when the redmen roved everywhere, along with the black bear, deer, and turkey. Also, they could understand what the early settler had to contend with in clearing a place in which to live and grow food.

The preservation of virgin forest tracts, however, has still another reason than sentiment or popular education. The forester of tomorrow will deal almost entirely with cut-over stands; yet, if he would attain the highest aims of silviculture, he must not lose sight of the facts which nature has recorded in the virgin forest. National Parks, watersheds, and other forest areas which by chance are safeguarded against the depredation of man, are not wholly adequate. They should be supplemented in such measure as may be necessary to secure a representation of all the important types.

Foresters and other workers in the biological sciences will find in such areas rare opportunities for research. The Ecological Society of America has recognized these facts by creating a "Committee for the Preservation of Natural Conditions." Their aim is to have set aside natural areas of all kinds ranging from the swamps of Florida to the desert of Arizona, in order that science may always have available for study every type of plant and animal life undisturbed by human agencies.

Plans are being made to publish a list of the areas at present protected, together with short descriptions of each. The National Forests are to be included in this list; for, although it is realized that they will not always remain in the primeval state, they will as a rule approach this condition more nearly than those forest areas outside of federal control.

Can we not go a step farther by selecting within the National Forests limited areas which will be preserved wholly in the virgin state? Do we not owe this to the public and to the scientific world at large, as well as to our own profession?

"Ain't It a Grand and Glorious Feeling?"

"After you have spent a miserable hot night listening to the thunder and high winds and watching the flashes of lightning in the middle of the dry season of the year, daylight finally comes, and you are hovering close to the telephone, expecting any minute to receive a call from the lookout man, and, sure enough, just as you have your breakfast well started, the telephone bell rings. You jump in answer. The lookout man says "fire," reading so and so and such and such a canyon, the wind is high and the fire about five miles away. You know the location and, Oh! it's a wonderful jungle, and in your mind's eye you see the flames leaping through the moss of the Alpine fir; a place that is hard to get to and a place where the fire is quick to start and with such a hot wind. With breakfast forgotten, you throw your saddle on your horse, grab your tools and emergency kit and follow the trail as far as you can and then dive into the jungles. Finally, after struggling and perspiring, with your clothes half torn off, your hands and face scratched, you break into a little opening and there is the smoke--but it's all coming out of a sheepherder's camp stovepipe--and--the sheepherder's breakfast is just ready! Oh, boy, ain't it a grand and glorious feeling?"--A Smoke Chaser, Whitman.

Universal Grading Rules - A Step Toward Them

By Ward Shepard, Washington

Anyone knows, or can find out, what a tenpenny nail is, and a request for it brings the identical article in San Francisco or New York. But if you ask for a No. 1 common white pine board, Heaven only knows what you will get, either as to species or quality. That is the difference between standardization and nonstandardization. Grading rules are enormous in extent and variety, though some progress, notably in hardwoods, has been made toward unification.

At the behest of the Branch of Research and the American Railway Engineering Association and under the auspices of the American Engineering Standards Committee, a meeting representing the Forest Service and large groups of producers, consumers, and engineers was held in the Atlantic Building, October 25, on railroad ties. This conference decided that the specifications for ties ought to be standardized, and turned the job of organizing and running a committee to do the work over to the Forest Service and the American Railway Engineering Association, to report back later to the industry. Great progress toward standardization was made by the Railroad Administration during the war and later by the American Railway Engineering Association and the National Association of Tie Producers, and the time is probably ripe for putting on the finishing touches.

This is only part of a much larger job the Branch of Research hopes to see organized, namely, the standardization of all lumber and timber products as to nomenclature, size, and grade. Such standardization would probably eliminate a vast amount of waste. Timber growers would know, at any given stage, into just what products their timber could best be cut and could cut to exact size without chance of loss from incorrect specifications; lumber producers could cut to sizes and grades universally in demand; and consumers would know what they were going to get if they specified certain species and grades.

The Forest Products Laboratory is already at work on the standardization of dimension stock to prevent waste and on both lumber and structural timber grades, and the Branch of Research is taking informal steps to sound out the sentiment of large associations of wood producers and consumers toward a national conference under the auspices of the American Engineering Standards Committee some time this winter on the whole complex and chaotic subject.

Salt vs. Alkali

By Leon C. Hurtt, D-1

It has long been recognized that a great deal of the range on the Custer Forest in District One is well supplied with alkali. Indeed, there are numerous Forest officers who have unsuspectingly drunk copiously of some of the Custer water who will unhesitatingly affirm, if not earnestly swear, that it is alkali.

As a result of this condition, the Forest Service has employed the soft pedal, more or less, in requiring grazing permittees to place salt on the range, since many of them contended very stoutly that cattle would not eat salt when they have access to alkali. Supervisor Whitham found, however, that there was at least one considerable area of range where the alkali was practically absent and where it was safe to use the water for other purposes than for washing. Oddly enough, he found year after year that an unusually large amount of feed was left a short distance from this water.

It may be said of the Supervisor that he assays rather high in persistence and by reason of exercising this faculty extensively he finally succeeded in getting some stockmen to place, as an experiment, salt on the ridges of this fresh water range. The cattle ate the salt with no apparent ill effects to themselves, and incidentally they utilized a considerable amount of the adjacent forage.

One gratifying result of the "experiment" was that a few of the Custer stockmen recently admitted that salting actually paid. There are others, however, that contend that it is unnecessary even on fresh water range and that the stock got along without salt in their fathers' time, forty years ago, and would continue to do so.

Salt vs. Alkali (Cont.)

The expenditure of a little more persistence on this subject by the Forest Service personnel will, I believe, soon win the approval of all stockmen to the use of salt where the amount and distribution of alkali is clearly inadequate to meet the requirements of the cattle.

Assistant Solicitors to Protect Forest Officers

Memorandum by R. W. Williams, Solicitor.

The Forester has brought up informally the question whether any additional legislation is necessary to authorize the Assistants to the Solicitor, in cooperation with the United States Attorneys, to defend Service employees in any suits which may be instituted against them on account of acts done by them in the performance of their official duties. He has also asked that, with a view of removing any doubt on the question, I call the matter to your attention. You are not only authorized, but it is your duty, to protect these officers and employees in any litigation of this sort. I assume that you understand fully your authority and duty in this respect, but this will remove any doubt that you may have in that behalf.

I find that the law and decisions on the subject are set out in a very complete memorandum (DL-Advice, Informal, April 15, 1921) by Mr. Brothers, a copy of which the Forester left with me informally. If you have not already been supplied with copies of this memorandum by Mr. Brothers, he will forward a copy to each of you upon receipt of this letter.

Not Enough Fingers in the Pie

By Wm. L. Barker, Jr., D-2

Mr. Morrell's article and the Editor's reply open up a subject which will bear and, I believe, can very well receive much discussion.

Even Uncle Sam is not immune from the publicity which is bound to follow an unusual act. If articles about "Lady Lookouts" are undesirable, women should not be appointed as lookout guards. Publicity was probably the big reason for appointing the first woman lookout.

The things that make the best news, the unusual things, are very rarely the important work of any organization. Feeding sawdust to "Bossy" at the Madison Laboratory is not the important work there, but it is the one thing that can easily get nation-wide publicity.

As I see it, the news value to the Forest Service of these unusual stunts and spectacular side lines lies in their capacity to carry information about our real work, which is not sufficiently interesting to stand alone. If we write the articles ourselves, we can sugar-coat what we want published with the information that the publication wants.

Mr. Morrell's suggestion that the "Lady Lookout" kind of publicity should form only one 1/100th part of the total is a good one, but not easily carried out. The few men in the organization who handle the publicity game haven't had time to put out much more than the spectacular stuff. It is easy to market and takes much less time than the more or less technical news on timber and grazing work.

Also, in many cases the dyed-in-the-wool foresters have not cared to advertise their work. They have not pushed their line with the publicity men who market the news. There has been little effort to place stories with the stock and timber publications. The newspapers get the bulk of the material and they are the publications above all others that demand the unusual.

"The Man Who Reforested a Mountain," when that mountain is no other than the already well known Pike's Peak, ought to find space in any one of several magazines of large circulation. Enough human interest, picked up at the many camps since the work has been in progress, could be injected to make the story very entertaining. That is only one of many which has not been published.

But I believe the real field is in fiction carrying a modest amount of accurate information on our work.

New Scheme of Measuring Tree Heights

By Herman Krauch, D-3

While recently engaged in the remeasurement of sample plots on cut-over areas of western yellow pine, the writer devised the following scheme which greatly increases the speed with which remeasurement of tree heights can be accomplished. It is simply to place the numbered tag--with which each tree is designated--on the same side of the tree toward which the height reading is taken. The observer can thus at a glance "spot" all trees that are read from the same general direction and proceed from tree to tree with the least amount of change in securing the correct horizontal distance.

A few words of explanation are perhaps necessary. In order to secure accurate data on increase of tree heights, it is essential that all periodic readings shall be taken from the same or apparently from the same location as the original readings were taken. It is impossible to read all the trees on a plot from the same direction on account of the difficulty in securing a clear line of site. This applies even to trees in the same group. It is therefore essential that the observer should be able to see at a glance which trees are read, looking in the same general direction. Otherwise an excessive and needless amount of time is lost in dragging the 100' chain about to secure the necessary horizontal distances. By tagging the trees as previously explained, progress in remeasuring tree heights is thus greatly facilitated--not only by making simultaneous reading of all trees read in the same general direction possible, but also in relocating the points from which the previous readings were taken.

This bit of information is furnished with the hope that it may find application in other Districts where sample plots are established.

WASHINGTON NOTES

Colonel Greeley and Asst. District Forester H. O. Stabler (D-7) left on Thursday for the Fire Conference at Mather Field, California.

Supervisor (at large) T. H. Gill of the Black Hills is in Washington assisting in Public Relations work.

Wanted: Cartoons on any and all forestry subjects, for use in Public Relations and for lantern slides.

If You Want to Know Anything, Ask "Compilation": Have you ever had occasion to want some "dope" about forests, tree growth, or other silvical subjects that somebody collected twenty years ago? If so, did you give it up after you had filled your lungs with the dust from the closed files? During the life of the Forest Service, there have been a lot of people who have studied or looked up particular subjects and written reports or letters which contained information. Besides the studies of various kinds which have been reported-on by members of the Service in the course of their official work, there have been a host of inquiries addressed to some Government agency at Washington which, if they contain any kind of a question about trees, eventually come to the Forest Service to be answered. For everyone an attempt is made to give the questioner all the information that we have or that can be dug up.

From a very early date in the history of the Service, copies of many such reports or letters have been filed in a special subject file in the Branch of Research, which is called "Compilation." All the material is kept current under a special subject filing scheme, and, what is more, when you want the information it can be found! It really amounts to a library of manuscript material. If you want to settle a bet as to the number of seeds to the pound of the Central American Ochroma lagopa, or the lightest wood, or the tallest tree on earth, or anything else, ask Compilation.--J.Kittridge.

FOREST PRODUCTS LABORATORY

Wood Acids: "Acid" is a term used by many people to designate almost any kind of chemical which has a corrosive action, and, in the same loose sense, the term "wood acid" is used in explanation of any unusual quality in a wood, such as taste, odor, or corrosion of metals in contact with the wood. As a matter of fact, only three chemicals correctly called acids have been found existing free in wood. These are tannic acid, acetic acid, and formic acid. Tannic acid is very feeble and has very little corrosive action on metals. The other two acids are also feeble in comparison with sulphuric, nitric, or hydrochloric acid, though they act upon metals to some extent.

A very small amount of acetic acid and a still smaller amount of formic acid apparently exist in all native woods, probably as the result of a slow action of water on wood at ordinary temperatures. All native species are also alike in that both of these acids can be produced very readily from them by the simple action of steam or hot water, a reaction for which there is no simple preventive treatment. Acids formed in the wood by the agency of steam or hot water are doubtless responsible for the results frequently attributed to acid supposed to have been in the wood originally.

The amount of acid normally present in any native wood is not sufficient to warrant its rejection for any purpose involving contact with metals.

DISTRICT 1 - NORTHERN DISTRICT

Question in Ranger's Examination reads somewhat like this: "How would you safeguard National Forests from fire caused by transients?" The answer by one hopeful applicant was as follows: "Do not let transients anywhere near brush or undergrowth, but if this can not be avoided, then remove the nearby brush and undergrowth."

Planting Research Work Transferred: The Forester has approved the transfer of the planting research organization in this district to the Experiment Station. This work has been done in the past at the Savenac Nursery under direct supervision of the office of Planting, but since it is purely investigative work, it has seemed more logical to place the organization under the Experiment Station. --E.K.

G. L. O. Cooperative Surveys: During the past year, much has been done in a cooperative way between the Forest Service and General Land Office toward a program for the extension of G.L.O. surveys over National Forest areas.

The matter was first taken up at a conference at Denver, Colorado, between Mr. Frank Johnson, Supervisor of Surveys of Denver and Assistant Chief Engineer F. E. Bonner of the Washington office. In January, instructions were received, authorizing the district to make any informal arrangement thought advisable with the Assistant Supervisors of Surveys of the States falling in this district, and such arrangements would meet with the approval of the Washington office.

In accordance with these instructions, requests for survey were made, early in the spring, to the Assistant Supervisors of Surveys of Montana, Washington, and Idaho respectively, as follows: about 15 townships in one block on the Bitterroot, Beaverhead, Missoula, and Deerlodge Forests; about 7 townships in one block on the Kaniksu; and about 4 and 6 townships in two blocks, the former on the Clearwater and St. Joe Forests, and the latter on the Clearwater and Selway Forests.

These three requests have been forwarded to the Commissioner of the General Land Office, Washington, D. C., and conditions look favorable for the survey of a part of these townships during the next field season.--J.B.Yule.

Ranger Bill Says:

Speakin' of hard work, did you ever look for a job, said a former Ranger to me t'other day.

I've just bought another cow for my wife to milk.'

My Grazin' report this year was better'n usual on account of havin' so many old ones to copy from.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

In Memory of Bessey: Professor R. J. Poole, of the University of Nebraska, has given the Nebraska National Forest an excellent framed picture of Dr. Charles E. Bessey, for many years the head of the Botany Department at that University. Dr. Bessey was much interested in forestry and it was his suggestion which led to the examination and withdrawing from entry of the Nebraska Forest for planting purposes. The nursery at Halsey and the Loup Division of the Forest have been named in his honor.

Mt. Evans Toll Road: A proposal to build a private road from the end of the new Forest Service road at Echo Lake, on the Pike, to the top of Mt. Evans, charging toll to provide reasonable return on the investment and liquidate the cost, with the idea of ultimately making it a public highway, has furnished material for front page write-ups in the Denver newspapers. There has been much discussion pro and con--most of it "con" thus far. The Forester has decided that no decision will be made in the matter until after December 1.

Posies in Prose: Deputy Supervisor Doering just couldn't resist the temptation to write a story for the Pueblo Chieftain of "Jim and Bill," two city chaps who spent a vacation in the San Isabel Forest. He describes a model bed of spruce boughs, a fireplace correctly built (set the coffeepot on the ground just within the hot embers), etc.

Descriptive of a spot where nine 14,000-foot peaks can be counted, and five "tranquil lakes nestled in restful green," he puts the words in Jim's mouth, "It was sound, solid beauty all the way through. There was no beautiful front lawn with its backyard of cans and garbage *** it was just the same--beauty, order, cleanliness, and marvelous simplicity."--Q.R.C.

DISTRICT 3 - SOUTHWESTERN DISTRICT

How Big is a Man?: With steadfast frequency men are met who seem to think they are bigger than law and regulation. They are too big to bother to get a hunting license or to wait for an open season. They are too big to trouble to use the forests legitimately, but obtain timber and other privileges without the annoying formality of application and orderly procedure, and the inconvenience of totally extinguishing a camp fire or of cleaning up a camp place they have used is simply too trivial to engage the attention of men of their stature, but nevertheless, at the conclusion of a properly prepared, presented, and prosecuted case there always seems to emanate from even a little Justice Court a sentence large enough to hold these oversize men for a little while at least.

The Competitive Spirit: There is such a jovial atmosphere of friendly rivalry throughout the Service, coupled with a justifiable pride in accomplishment within the unit in which we work, that we challenge every boast of any other similar unit, and so we get on and endeavor to excel. We love the thing we are doing and then there is a wee bit of satisfaction in the exhilaration that comes from announcing a "bigger one," "one of a different color," "shorter elapsed time," "more miles at less cost," and so on. Thus do we check one another, individually, by Forests and by Districts, and in the enthusiasm we do better work, get more joy from the working and leave the net result of achievement with the organization in whose interests we strive.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Glass Houses: Every news bulletin of the Service that one picks up now-a-days contains one or more accounts of law enforcementsinvolving persons outside the Service who have been careless with their camp fires or with matches, cigarettes or pipes. We are heartily in favor of this campaign for educating the public. There is, however, no better way to educate them by example. On one stretch of road and trail which I traveled this summer, it was the unfailing practice of the permanent force to dig a hole and make a fireplace perfectly safe before starting a camp fire. It was a very noticeable fact that other campers very generally used these same fireplaces, or made similar ones. On another similar stretch of road and trail traveled alike by Forest officers and the public, I saw but one camp fire hole. There's a reason. We expect to go after the public. Let's do it with clean hands.

DISTRICT 4 (Cont.)

I am going to make some charges against Forest officers, and by the term I mean every man in whatever capacity employed from the District Forester to the Guard and trail worker during the fire season:

(1) We have not all carried a shovel when traveling where we might need it for handling our own camp fires or other fires.

(2) We have not always dug a hole and made conditions perfectly safe before making a fire.

(3) We have not always been positive that our fire was out by drenching with water and by burying with earth before leaving.

(4) We have not all been careful about smoking along the roads and trails and that matches, etc., were completely out.

These things are generally covered by more or less specific rules but they don't get over.

If any Supervisor knows that he and his force are absolutely clear on these points for this season, I know he will be justly indignant and that we will hear from him, and we will all be glad to learn how he got it over.--R.H.R.

Worthy of Emulation: A train of thirteen loads of cedar wood was recently met on the road from Dry Fork Mountain to Vernal which turned out to be the annual journey of the men of Naples Ward after wood to supply the needs of the widows and needy of the ward. The trip takes the nature of an outing and the service rendered is worthy of emulation.--Ashley.

DISTRICT 5 - CALIFORNIA DISTRICT

Foresters in Our Midst: We have had the pleasure the past week of entertaining District Forester Cecil from Portland, Oregon, Mr. C. S. Chapman, Forester for the Western Forestry and Conservation Association (an old F. S. man, one time District Forester at Portland, Oregon), and Mr. Cameron, District Forester of British Columbia, located at Vancouver. Mr. Cameron is greatly interested in fire protection and has been invited to attend the fire conference at Mather Field. He indicates that he will be glad to accept. It is understood from District Forester Cecil that Canadians have gone very far in the development of specialized fire fighting equipment and the use of aircraft for transportation of men.

Addresses Logging Congress: District Forester Redington addressed the annual meeting of the Pacific Logging Congress in San Francisco on October 27, his subject being "The Relation of the Airplane to Forest Protection." A resolution was recommended by the body of delegates that Congress be urged to continue the airplane work for another year.

Col. White Drops In: Col. John R. White, Superintendent of the Sequoia and General Grant National Parks, called on the District Forester on October 29. He stated that the travel in the two parks the past season was the heaviest in their history, and that he had difficulty on limited appropriations to adequately handle sanitation problems at the camp grounds. He expressed his appreciation of the cooperation existing between the Park officers and those of the Sequoia National Forest.

Air Patrol Pictures in N. Y. Evening Post: There appeared in the illustrated section of the N. Y. Evening Post of Sept. 17, 1921, four photogravures of air patrol work in California. These views were given some months ago to Mr. Arthur Ruhl, author and war correspondent, and used as above indicated. An article on the subject also appeared in another section of the same issue of the Post.

Resolutions by Pacific Logging Congress: The Pacific Logging Congress meeting in San Francisco October 26-28 passed several resolutions of interest to foresters:

1. Urging establishment of Forest Experiment Station;
2. Urging appropriations to handle the insect control work in Northern California and southern Oregon.
3. Praising work of Forest schools.
4. Urging continuance of air patrol for fire protection.

DISTRICT 6 - NORTH PACIFIC DISTRICT

He Believes in Signs Now: The following is from the Cle Elum (Wash.) Echo of October 7:

"This week Justice Burge has fined two parties for violating forest laws. In the first place, H. S. Olsen of Outlook pleaded guilty and was fined $25 and costs for defacing a sign put up in the National Forest, calling attention to fire dangers. He will remember this for some time and it will be a warning to others. The offense occurred July 29th, but Ranger Blankenship (Wenatchee) at Easton is a persistent official and finally located his man."

Gov't Mineral Springs Camp Grounds Popular: This is the first season that the Government Mineral Springs Camp Grounds have been accessible. Practically no improvements have been made because of the limited funds available for this purpose. It is all the more remarkable that during the first season this camp ground should be visited by over 6,000 people. By actual count during the period from July 5 to August 29 there were 1,407 automobile camping parties at the camp grounds, an average of 26 cars per day. The same rate was maintained during the first part of September.

When Press Agents Get Together: I jerked the Lizzie from the jack pine road to the highway and the Washington Office men asked me what road we were on. I answered "The Crater Lake Road," and "right there I made my big mistake," for the W.O.M. swung a verbal right that changed my mental map forever.

"Why didn't you say the Deschutes National Forest Road or the Deschutes Forest Road to Crater Lake?" and I had to admit that I had fallen for a clever publicity stunt and unconsciously become a press agent for the Park Service to the detriment of my own pet Forest.

Here, it seems to me, we have been overlooking a bet. Granting that our Parks are worthy of advertising, and there is no argument on that score, our Forests also deserve publicity, and surely there is no cheaper way than by being careful in naming our roads and trails.

The newspapers are always keen for news regarding roads and it is easy to start a name which will be an endless source of publicity of the best kind.

Make the names distinctive and so intimately connected with the particular Forest that whenever anyone reads or hears it he will associate it with the National Forests and their purpose.

In giving road directions to tourists, in our general conversation we should emphasize the National Forests, and "Press Agent" for them rather than for some attraction several hundred miles distant.--F.V.H.

Should More Care Be Used?

By H. D. Swan, D-1

That our propaganda for forest protection is beginning to bring results is one of the gratifying things learned by talking personally with several thousand visitors to the Forest Service exhibit at four agricultural fairs this season. There is no longer any doubt that the public realizes the problems the Forest Service has to meet in combating the fire menace, and also understands what a large measure of individual responsibility must be assumed by every person going into the woods. Persons stopping to talk with the attendant in the booth rarely left without asking how many fires we had had during the season, and seemed especially interested in our opinion as to how many fires were either maliciously or carelessly set. Occasionally, a

Should More Care Be Used? (Cont.)

sportsman would go into details as to how he constructed his fires so as to prevent trouble. It may be said that carelessness through ignorance is a thing of the past.

Less gratifying is the opinion which many hold that enormous waste is brought about by our methods of fire fighting. Persons spoke of seeing large quantities of grub, "enough to feed armies," piled on station platforms. Extravagant stories were repeated of our prodigality in the purchase of equipment, and the legions of men sent to the woods during a "season."

Now we know that most of these stories have little, if any, real foundation. Fires must be fought when they occur. To do this requires men, grub and equipment. But have we given too much publicity of the wrong kind to our operations? In the excitement of the moment is there not danger of giving too much of the sensational to the press and public? The movement of supplies and men usually attracts enough attention without being advertised, and it is believed that the less publicity connected with this phase of the situation the better.

An excited forest guard was once heard to remark to a group of interested listeners on a station platform who had inquired about a certain fire, "You bet she's a bad fire; why I just expressed 'em a ton of hay and half a ton of bacon."

The fire was ninety miles away, express rates are high, and bacon expensive. Is not the result of this sort of remark obvious?

Hasty Conclusions

By Howard R. Flint, D-1

In a recent excursion into the closed files of District 1, there comes to light a news item clipped from a Montana newspaper dated June 11, 1906, a historical date in the annals of forest homesteads. Important as the Act of June 11 seemed at that time, however, it is not the subject of the clipping in question. This item sets forth as a fact the statement that Forest fires are being rapidly minimized under Forest Service regulation, and clinches the argument by quoting statistics for the years closing January 1, 1905, and January 1, 1906. The figures indicate that 0.66 per cent of the area of National Forests were burned during the first year, and only 0.16 per cent burned during the second year. The conclusion drawn is quoted below:

> "While the reserve area has almost doubled, the burned area has been reduced by more than one-half and the percentage of area burned has been reduced by more than three-fourths."
>
> Only since February 1, 1905, have the reserves been under the administration of the Forest Service. This reduction is therefore the showing of the first eleven months of administration by government foresters."

A splendid tribute to the ability of the infant organization! Since that item was printed, District 1 has survived 1910, 1914 and 1919 fire seasons, and many valuable lessons have been learned. One bit of knowledge that comes home forcibly, after a perusal of the item, bears evidence of the fallacy of drawing conclusions from insufficient data. The figures for the two years are very conclusive in themselves, but when compared with those for 1910 or 1919, they seem of value only in that they indicate the need for more complete statistics. The fire problem can not be solved by statistics, but reliable data on fires become increasingly valuable when kept over long periods of time, and well justifies the trouble of keeping good records, if such records do nothing but prevent us from jumping to erroneous or ridiculous conclusions like the one cited above.

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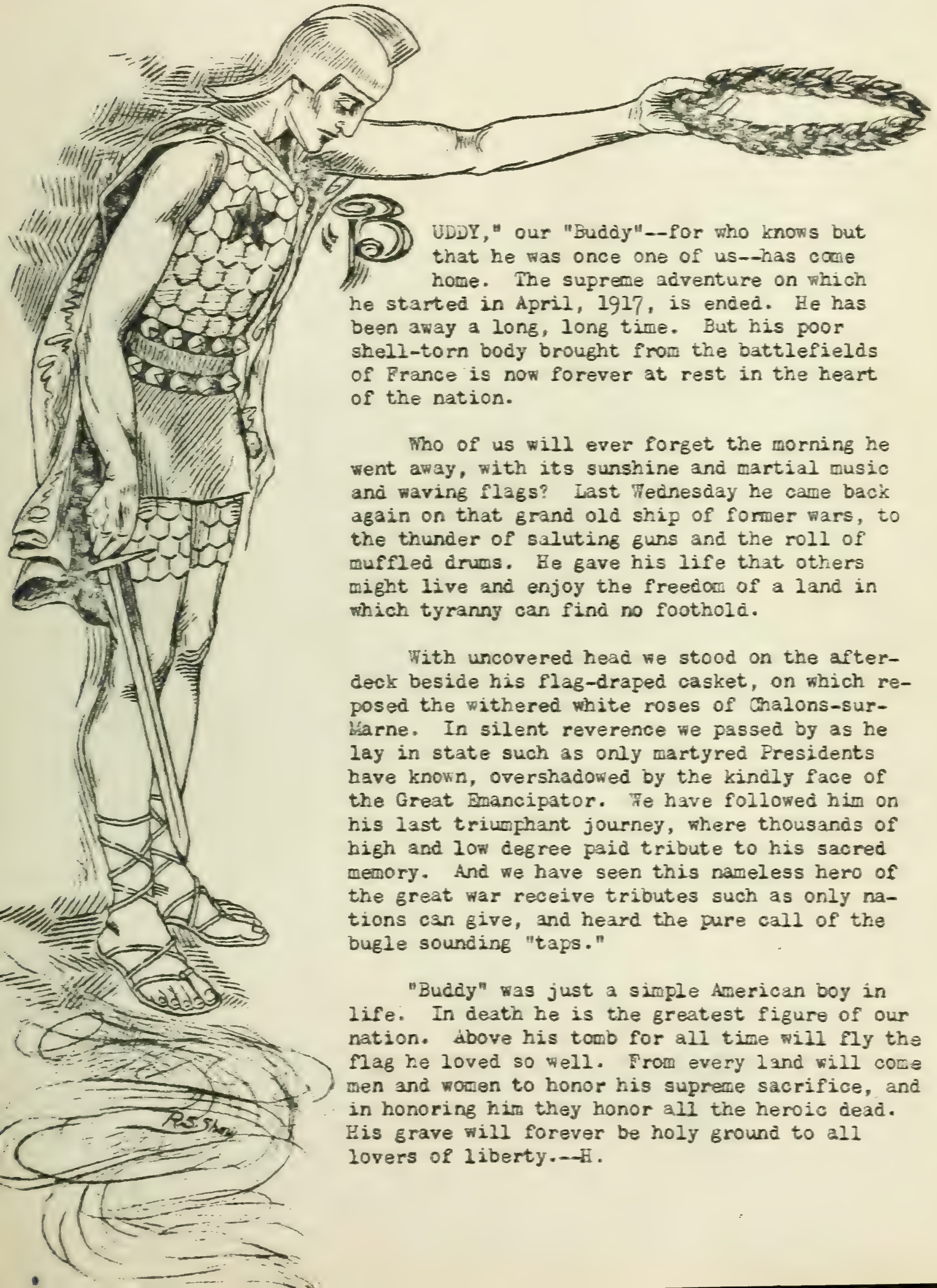

"BUDDY," our "Buddy"--for who knows but that he was once one of us--has come home. The supreme adventure on which he started in April, 1917, is ended. He has been away a long, long time. But his poor shell-torn body brought from the battlefields of France is now forever at rest in the heart of the nation.

Who of us will ever forget the morning he went away, with its sunshine and martial music and waving flags? Last Wednesday he came back again on that grand old ship of former wars, to the thunder of saluting guns and the roll of muffled drums. He gave his life that others might live and enjoy the freedom of a land in which tyranny can find no foothold.

With uncovered head we stood on the afterdeck beside his flag-draped casket, on which reposed the withered white roses of Chalons-sur-Marne. In silent reverence we passed by as he lay in state such as only martyred Presidents have known, overshadowed by the kindly face of the Great Emancipator. We have followed him on his last triumphant journey, where thousands of high and low degree paid tribute to his sacred memory. And we have seen this nameless hero of the great war receive tributes such as only nations can give, and heard the pure call of the bugle sounding "taps."

"Buddy" was just a simple American boy in life. In death he is the greatest figure of our nation. Above his tomb for all time will fly the flag he loved so well. From every land will come men and women to honor his supreme sacrifice, and in honoring him they honor all the heroic dead. His grave will forever be holy ground to all lovers of liberty.--H.

A Boost for Forest Roads and Trails

By T. W. Norcross, Washington

The President, on November 9, signed the road bill which Congress has been considering since the beginning of the present session. The Act carries an appropriation of $90,000,000, of which $75,000,000 is for the continuation of the cooperative work with the States. The balance of the appropriation, a total of $15,000,000, is for National Forest roads and trails. Of this total $5,000,000 is now available for expenditure. The remaining ten million dollars will be available on July 1, 1922, and the entire appropriation is available until expended.

Instructions to the District Foresters have already been sent, and it is expected that within the coming few months the 1922 program will have been determined, thereby permitting the beginning of construction on a large scale on the opening of the field season. Before that time it is hoped that weather conditions will permit the making of some of the preliminary surveys or investigations and the starting of necessary construction or improvement work now made possible.

I do not believe that one Forest officer meant what he said when he remarked that he would rather not have a new appropriation if it meant changes in legislative and administrative requirements. If by any chance he did mean it, he will be disappointed in the new legislation. But he will be alone. The facts are that the provisions of the new Forest road appropriation section are quite different from the preceding legislation, and because of this difference are very pleasing. The legislation clearly recognizes what the transportation problem is and handles it in a satisfactory manner. It now seems to be clearly understood that the Forests need roads for two main reasons, first for the protection, administration and development of the Forest land and resources, and second for public travel and for the development of resources upon which communities in or near the Forests are dependent. For roads of primary importance to the States, counties or communities, $9,500,000 out of the $15,000,000 total is set aside. $2,500,000 of this is now available for expenditure and has already been apportioned to the States and Territories. This appropriation has been named the Forest Highway Fund. Section 23 provides that of the amount now appropriated by this section, or that may hereafter be appropriated for the same purposes, 50 per cent, but not to exceed $3,000,000 in any one fiscal year, shall be used for roads and trails of primary importance to the Forests themselves, or for the development of resources upon which communities within the National Forests are dependent. In other words, for the roads and trails most essential to the protection and development of the Forest resources $2,500,000 is now available, $3,000,000 will be available on July 1, 1922, and 50 per cent, or not to exceed $3,000,000 in any one fiscal year, will be available from later appropriations made under the provisions of Section 23 of the new Act. This appropriation has been named the Forest Development Fund.

The forest section of the Act provides that the Forest Highway fund shall be apportioned to the several States, Alaska, and Porto Rico on the basis of the area and value of the land owned by the Government within the National Forests of each State or Territory. As regards the Forest Development fund, Congress recognized the undesirability of apportionment based on area, value and other definite factors, and authorizes the Secretary of Agriculture to make the apportionment between the States after considering the relative needs of the Forests, existing transportation facilities, value of timber and other resources, the public interest to be served, relative fire danger, and comparative difficulties of construction.

Another distinctly interesting feature of the new legislation is that while the Secretary of Agriculture is permitted to accept cooperation, he is not required to obtain it before approving a project which he deems of sufficient importance to the Forests and public travel to justify the entire cost being borne from Federal funds. Another new feature is that expenditure on projects partly or entirely outside the Forest boundaries is permitted, provided they are adjacent to and actually serve the Forests.

Impressions From the Clearwater Burns

By J. A. Larsen, D-1

At last I have had a close-up of the Clearwater burns of 1910 and 1919. My trip over the Forest was made for the purpose of studying natural reproduction on the burned areas. Fire has laid waste hundreds of thousands of acres here and left a domain of ashes, dust and desolation. There are seemingly interminable ranks of stubs and bleached spectres of a once luxuriant forest through which the wind drives spinning colums of dust,--a place intolerably hot by day and chilled by cold blasts down the deep canyons by night. Travel is made difficult because of the great profusion of down timber and brush in the 1910 burn and by dense, man-high vegetation in the 1919 burn. Magnificent mountains and slopes have been stripped of their investiture and expose to view the work of the tooth of time; streams which have carved their rocky gorges in obscurity for centuries now rumble and fret, hiss and roar over innumerable obstructions of dead trees which once furnished shade and seclusion.

Generally speaking, the 1919 fire followed in the wake of the earlier one, but the momentum acquired in the dead material of the 1910 burn carried it beyond the former and also made it possible to destroy section after section of beautiful alpine forest of massive hemlock, fir and spruce, which the 1910 fire had spared. One marvels at the completeness of the job of destruction; only on the leeward sides of the great peaks and highest ridges and under overhanging bluffs and in the deepest canyons are now found small patches of green timber. Out in the open where the flames had free sweep there is not a single green tree left. Along the steep slope of the North Fork of Clearwater River, where the 1919 fire vented its fury on one of the most beautiful white pine forests in the West, the magnificent trees are in many places uprooted and strewn like toothpicks.

Natural reproduction appears generally very successful and satisfactory over the 1910 burn, but is poor and almost lacking on the steep southerly slopes. The dead trees in the 1910 burn are yet standing in great numbers, and the vegetation consists of a very dense cover of shrubbery with much elder, gooseberry, thimbleberry and beargrass. This appears to favor rather than hinder reestablishment of the forest and to prevent erosion. Where the 1919 fire followed the earlier burn it left only charred stubs and stumps and very clean ground; the reproduction there is as yet nil and it is difficult to believe that this land will reforest naturally in our day. The vegetation is mostly herbaceous with great profusion of fireweed, hollyhock, thimbleberry, goldenrod, ferns, wild pea, grasses and sedges, most of which is excellent sheep forage. The soil is everywhere deep and rich; it appears to be made up largely of volcanic ash overlying a granitic formation. There should be no apprehension as to erosion, and the only possible loss to the soil by the fires will be leaching out of the finer particles on the steep southerly slopes.

On these burns elk, deer, partridge, grouse, gophers, grasshoppers, birds and bear appear to be abundant. A biological study with the view to determining just how these extensive burns affect wild life, game and fish would be of much value.

The whole story as to the effect of these fires will not be told until we can say what will be the effect on runoff; if an unusually deep mantle of snow should melt in an unusually short period bridges and low farms will not be worth much, and someone may get unusually wet.

The enormous stretches of land denuded by the two fires, the excellent soil and the rapid growth assured should make planting of western white pine one of the first considerations. While the entire area can not be reforested, blocks of about a half acre at suitable intervals would supply groups of seed trees which in thirty or forty years would provide seed for the rest of the ground.

Ranger Bill Says:

'Pears like there must be some use fer ignorance in the world there's so blamed much of it around.

Ranger Tim Bermans diary shows two extra hours a week under Improvements since he got a bath tub at the Station.

If you can't do the little things well, don't kick 'cause the Super. passes out the big jobs to someone else.

G-Permits, Guinea Pig

By C. E. Dunston, D-5

On a recent field trip Deputy Supervisor West and I came upon a new cabin on a June 11 homestead in the upper Hat Creek country. This homestead has changed hands two or three times, so it has been difficult to keep in touch with the aims and aspirations of its respective owners. The latest residents are a young couple from Los Angeles. Perhaps the influences of life in that great city are responsible for the strange undertaking that these two young people have engaged in. At any rate, no similar industry has ever been conducted on a Forest homestead in northern California. They are raising pigs. Not the ordinary kind which provides pork chops and breakfast bacon, nor yet his lowly brother the razorback, but instead the prolific guinea pig.

The homesteaders came with a herd of seventeen. It is reported at the last count that the drove numbers forty-one. It is reported that these guinea pig raisers expect to sell the hides in Los Angeles, where heavy furs are not so greatly in demand as in northern regions. They are now striving to produce guinea pigs with pink ears! We have not learned the particular reason for raising this unusual variety of guinea pig.

We have had no application for range to provide for this rapidly-growing band of guinea pigs, but at the rate it is increasing we may find it necessary to allot range for them.

Better hold a feed lot count twice a week.---Ed.

WASHINGTON NOTES

National Forest Receipts July 1, 1921, to October 31, 1921. Total receipts for the National Forests for the first quarter of the present fiscal year amounted to $1,304,451.58 as against $847,062.71, an increase of $457,388.87.

Activity		Increase or Decrease
Timber Sales	-	$122,528.[illegible]
Timber Settlement	-	2,617.[illegible]
Timber Trespass	-	1,514.71
Grazing C & H	+	359,149.33
Grazing S & G		227,440.42
Grazing Trespass	-	3,114.47
Special Use		1,456.52
Occupancy Trespass	-	191.77
Water Power	-	3,331.90
Fire Trespass		2,479.80
Turpentine Sale		3,741.05
Property Trespass		10.00

The increase or decrease by Districts is as follows:

District		Increase or Decrease
1		$59,375.54
2		38,548.61
3		4,894.45
4		164,533.05
5		79,462.41
6		[illegible],515.12
7	-	22,616.16
8		13,655.75
Total increase		457,388.87

Photo Negatives: From time to time considerable numbers of small negatives (1-3/4 x 2-3/4 inches or thereabouts) are sent to Photography for numbering and filing. While specially fine negatives of this size, which illustrate out of the ordinary subjects and will stand enlargement, are acceptable, it should be understood that the minimum size suitable for Service collection use is 3-1/4 x 4-1/4 inches.

FOREST PRODUCTS LABORATORY

Foresters on the Increase at the Laboratory: "And why not?" is the natural query of those already on the laboratory staff. The intimate relation of the laboratory to the forestry game as a whole, gives an answer to the interest the foresters have in the utilization part of the game, as well as in the silvicultural and management sphere. The forester in the field can make two trees grow where but one grew before, and the forester in the laboratory can lend a weighty hand in the game of making those two trees eventually do the work that formerly required four. To-day there are 18 foresters on the laboratory staff, an increase of eight over a year ago. The increase is due largely to the organization of the new section of Industrial Investigations, but the foresters are found, as well, in practically every other phase of the work.

School Days: With preoccupied looks, arms loaded with laboratory bulletins and text-books and muttering formulae on temperatures and humidities, eight men of the new kiln-drying course have been seen about the halls during the past week. Ten others, their heads full of new and startling facts on boxes, have also been adding a school-like air to the atmosphere. The kiln-drying course runs for two weeks starting November 7, and the box course for one week beginning the same date. As usual, the representation is widely distributed through the States. Illinois, New York, Connecticut, Texas, Michigan, Massachusetts, and Pennsylvania contributed to the box course and New Jersey, Arkansas, New York, Oregon, Ohio, Louisiana, Pennsylvania, and Missouri sent men to the present kiln-drying course.

DISTRICT 1 - NORTHERN DISTRICT

In Again, Out Again: At 5:30 on the evening of October 24, Ranger Walde, of the Selway, caught Charles Rurey in the act of picking up a bird which he had just killed. Rurey was placed under arrest by Walde and taken to the Pete King Ranger Station. At 5:45 Walde phoned to Supervisor Jefferson's office for instructions as to the disposition to make of his prisoner. He was told to hold the man and get a signed confession and a written statement of guilt while the case was being discussed with the local Justice of the Peace. The Justice was located at six o'clock and on the basis of a complaint signed by the Supervisor, levied a fine of $25.00 and costs to be collected by Walde if a written plea of guilt could be obtained. This information was phoned to Walde at 6:15. Rurey immediately tendered a check in payment of the fine, which Walde refused to accept until certified by the Cashier of the bank upon which it was drawn. By nine o'clock in the evening this certification had been obtained by telephone, the fine collected and the prisoner released.

But--S'pose it's Cloudy: A rough and ready method of measuring the diameter of a tree is as follows: The tree must be sufficiently isolated for the trunk to cast a clear shadow on the ground. The hand placed at breastheight on the tree will, by its shadow, indicate the point of measurement. The width of the shadow at this point is the diameter breasthigh of the tree.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Timber Survey Finished on Colorado: Field work on the Pinkham and Laramie River timber survey project on the Colorado has just been completed. This work was accomplished by two field assistants working under the direction of Forest Examiner Brown. Thirty-three sections were cruised from which two million or more ties may be cut.

Mr. George B. Sudworth, Dendrologist from the Washington office, inspected the Bessey and Morton nurseries and the Nebraska Forest plantations, after which he spent a day in the District office and then went through the Pike plantations and the Monument nursery. While at Halsey, Mr. Sudworth investigated the loss of approximately half the 2-year jack pine seedlings in one area in the nursery. This loss was at first supposed to have been caused by sun scorch, but it now appears that it may have been due to some cultural condition.

DISTRICT 2 (Cont.)

Ute Indians Buy Hunting License: Ranger D. S. Thomas of the Montezuma states that from October 10 to 18 he was in the field where the Utes go deer hunting and only found three Utes, all of whom had big game license and were apparently obeying the game laws. Thomas asked one if he had killed any deer and the Indian replied he had only seen small ones and wouldn't kill them. He added "mayby so me ketchum big one all right."

DISTRICT 5 - CALIFORNIA DISTRICT

Radio in the U. S. F. S.: In the October issue of Pacific Radio News appears an article bearing the above title. It was written by F. K. Teeter, Jr., and gives a most interesting discussion of the use of radio in connection with forest fires.

New Unit of Measurement: Guard Phillips on the Sierra reports, in regard toa a certain fire on his District, "This fire started in an area surrounded by slide rock, and about all the damage done was the burning of a small area of cherry brush, whose value was approximately five cow hours."

A Generous Hunter! A certain, well-known District 5 Forest Officer recently took his best friend on a deer hunting trip. Said "friend" showed his appreciation by killing 2 does the first morning out. RESULT: A donation of meat to the county hospital, a $50.00 fine, and a much disgusted Forest Officer.

Camp Fire Permit Has More Uses Than One: The other day a young lady in Los Angeles found a gentleman's pocketbook on the street, and the only means of identification of ownership was a fire permit issued by W. L. Sears for a camp fire on the Angeles Forest. She immediately called up the local office, procured the address of the gentleman and notified him where his lost property could be found.

Trouble "Bruin": The District Forester had a call recently from a member of the U. S. Junior Naval Reserve force. Some of the young men of this Reserve have decided that they need a mascot for the ship on which they are receiving training, and wanted to know if the District Forester could locate for them a cub bear to be used as their mascot. Mr. Redington did not have one immediately "on tap," but learned from the Fish and Game Commission that there was a possibility of securing a good live one for the boys.

DISTRICT 6 - NORTH PACIFIC DISTRICT

They'll be Spotting Lightning Bugs Next! Not long ago Lookout Bosuett, on the Chelan, called up Mr. Maurer, a rancher, and asked him if his house was not on fire. Mr. Maurer laughed and told him that he had the wrong number. Bosuett insisted that he did not and advised Maurer to take a look around. Mr. Maurer did, and found that the chip pile behind the house was ablaze and in a few minutes more would have set fire to the house. When relating the incident Mr. Maurer said, "The Forest Service certainly has this detection business down to a science."

Three lightning fires on the Deschutes Forest were reported and corralled before they reached the ground, so the boys cut down the trees in order to extinguish the blaze. Next year they plan to start work before the lightning flash reaches the tree.

Ravings from the Siskiyou: "I have nursed a lot of ailing telephones back to where they function normally and satisfactorily during the month. I have attained a degree of efficiency with the climbers which makes it possible for me to fall gracefully from a height up to and including thirty feet in heavy brush areas and up to nine feet in the open yellow pine districts. I have met and conquered the opposing hordes of live oaks with their yearly crop of of whiskerlike sprouts whose name is Legion, and I feel sure that had 'Ranger Bill' of Service Bulletin fame been with me that he would have remarked in his saddest and most approved manner, 'Oh, Death, where is thy sting!' The trails have come in for their share of my prescribed 70 per cent in the field, while the cunning spider weaved his intricate designs, undisturbed amongst the keys of the trusty Oliver. And now, before the permitted 30 per cent at Headquarters has been laboriously disposed of, allow me to ask a question, answer it ye who will: Is shoeing horses office work?"

The Mountaineers in the Mountains: The Mountaineer Club from Seattle and Tacoma spent their annual outing in the Wenatchee and the Chelan Forests this season. They entered the Wenatchee by way of Leavenworth and climbed Glacier Peak. They camped a few days at the head of Agnes Creek and climbed Saddle Bow and Sitting Bull peaks. They then moved to Lyman Lake and climbed Chawawa besides making several short climbs to the less important peaks.

Corralling the Biltmore Plantations

By Ferdinand W. Haasis, Appalachian Exp. Station

The Appalachian Forest Experiment Station begins its work in a unique situation: Whereas the other stations have always been under the necessity of inaugurating their own planting work, we find on the Biltmore Estate a substantial group of plantations already established and waiting for use. Through an unfortunate set of circumstances the elaborate records, maps and descriptions of these plantations are no longer extant. We have, therefore, an intensely interesting number of results now available but do not know just how they were obtained. For this reason, then, and in order that these results shall not be wholly valueless, an effort is being made to locate on a base map all the plantations now on the Estate, to assemble all available history and to describe the present condition of the stands. In this way it is hoped to put into an accessible form the lessons which these plantations can teach.

These plantations are among the most interesting in America. The oldest ones are now thirty years of age, the others of various ages, though none are younger than nine years.

Probably there was planted a greater acreage of white pine than of any other species, although many different species were experimented with, ranging from black cherry to ailanthus and from western yellow pine to Siberian larch. Certainly the white pine is among the most satisfactory of the species used. One hill now looks like a practically pure white pine plantation, although its history shows that over twenty other species were used here in considerable quantities. In 1895 this hill was an eyesore upon the Estate, badly gullied and covered with a stand of coarse grass.

In some cases shortleaf, pitch pine, and even hard maple are competing vigorously with the white pine, while in other instances the white pine is very definitely in the lead. Douglas fir has been planted, but does not appear at home in this climate. Western yellow pine seems to have been a complete failure, none having been found this year so far. Hardwoods have suffered considerably from rodents.

A few experimental thinnings were made by E. H. Frothingham in 1916. It is planned to remeasure these sample plots this year and to make additional thinnings.

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Service Bulletin

U.S. FOREST SERVICE
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THE FORESTERS' "LINE"

A person's usual topic of conversation is frequently referred to as his "Line." Commercial men have a logical "line" of talk through which they approach their customers and sell their goods; political aspirants have a "line" they use, frequently with success, when they ask for your vote; persons who are often requested to speak in public have a "line" upon which they can talk intelligently at a moment's notice; the clever stranger we meet without a formal introduction has a "line" that makes him interesting, in fact every person has a "line," and the degree of his success depends largely upon the clever way he unwinds it.

Forestry in this country is not an old profession, but it is natural for people to like trees. A subject that is liked is always interesting. So it may be said that forestry is a new, interesting subject. Foresters know more about this subject than 99 per cent of the people with whom they come in contact. There is not another profession in which there is such a good chance for its men to have an interesting "line" as in Forestry.

Every Forester should have his "line" worked up so that he is able to spring it at a moment's notice. This line will naturally be capable of slight variations so that it will fit into the business of those upon whom it is used. Talk to farmers about their woodlots, to the wood user about the future timber supply, and to the recreation seeker about the relation of forests to fish and game. The Forester will use as much "local" material as possible. The following points are suggested:--A summary of the number of fires during the past year in the District, acreage covered, damage suffered, and prevention and control methods used; reforestation in the District, the best species to plant, details of the planting operation and the Pennsylvania policy for growing and distributing trees; the need of wood in every industry, especially farming, mining, railroading, pulp, and tanning; the amount of timber imported into the State annually, the cost and pro-rated share to each man, woman and child; Pennsylvania's timber problem and the plan to meet it. This will include the area of State Forests and their development, research, technical education and publicity.

A GOOD FORESTER preaches forestry. To do this in an interesting and instructive way he must be thoroughly familiar with the work that has been done, that is being done, and that should be done, in his District, and in the State. Have you prepared a "Line?"--Pennsylvania Dept. of Forestry News Letter.

Need for a Recreational Policy

By S. M. Shanklin, Nantahala

In developing recreation on the National Forest there are unlimited possibilities. Danger of overzealousness and pushing this activity to extremes will be entirely eliminated provided we anticipate public demands and prepare a definite policy that takes into consideration the future as well as the present recreational needs of the public.

Need for a Recreational Policy (Cont.)

A sound and definite recreation policy does not mean the reservation of our especially attractive sites, but their utilization so as to benefit the largest number of the public who are in greatest need of this kind of outdoor life. The present use of these sites by the public will tend to enhance their value as recreation centers and will in no way detract from future recreational possibilities. Care should be taken to prevent these sites from being tied up for indefinite periods unless their recreation possibilities are being utilized to the fullest extent. It would be a difficult matter to explain to an organization that deserved an attractive special use the need and desirability of withholding one of these sites.

There seems to be no good reason why recreation should not be developed and sold the same as other Forest products, and if proper salesmanship is used we need have no fear of its being oversold. If, by a certain amount of artificial stimulation, we can increase recreation along proper lines until it is one of our major activities, so much the better.

While it is realized that this problem is one that is loaded with dangerous possibilities, unless properly handled, we should tackle the job just the same. The task of correctly solving this problem is being forced upon us and the time to "take the bull by the horns" has arrived.

After a well planned recreation policy has once been adopted by a Forest, the fear of publicity to this particular activity will have disappeared. But until this is done the spectre of restrictive reservations will always be in the background. We must not lose sight of the fact that the public look upon the National Forests as "National Playgrounds."

"Looks" Count for Everything

By Mollie Ingoldsby, D-5

Women are generally appointed to Government positions if they have ability or brains. But in the Forest Service there is one job now open to the fair sex where "looks" are everything. If she is not a "good looker" she need not apply. And it is all in the eyes. She simply must have eyes and know how to use them. Providing she can and will use her eyes, is not too timid to live in a tiny house, mostly of glass on a mountain top, with no one but herself for company a great deal of the time, the chances are she will be a competent lookout and able to sight and report forest fires that occur within her range of vision.

As one of the pioneers, having served for four seasons in the Plumas, I have received hundreds of inquiries from girls who think they would enjoy this line of work. Many say they prefer to be by themselves and would not mind the loneliness of the life. Personally, I do not agree with them. I love my fellowmen--and women, too much. The isolation is the one great drawback, but the many advantages really compensate for this lack, according to my experience. If studiously inclined there is plenty of time for reading. Otherwise there would be many dull hours. But by using good judgment, the season may be very profitably spent if the lookout has any outside interest, such as drawing, writing, or any line of study.

Mt. Elwell, where I have been stationed, is in the heart of the Feather River Canyon country. This is visited by tourists and many of the hikers start early and spend the greater part of the day at the peak. Often the more daring ones stay to watch the sunset and take a chance at getting back to camp after nightfall. On some days there have been as many as sixty guests. But very few lookouts are so fortunately situated.

The view from the summit of Mt. Elwell is well worth the climb. On a clear day, and nearly all the days in summer are clear, it is possible to see Mt. Shasta, which is about a hundred and twenty-five miles distant. About twenty lakes are in plain sight, and on every lake are eager fishermen, hoping for, and often catching, the elusive trout. Each morning the airplane passes overhead. The observer is also watching for forest fires and reports by wireless. Occasionally he drops a daily paper, which means a great deal--after getting week-old news--to have a copy the day it is published. So it is possible to be on the "top of the world" and still keep in touch. Of course the telephone is indispensable. During the day it is used for business only, but in the evening it is permissible to chat, providing, of course, it does not interfere with official calls. Often music is enjoyed by wire. Last summer a young man who really could play the violin "did his bit" each evening for the benefit of all who wished to listen in. It surely was a treat to all of us. So, everything considered, a lookout need not be utterly lonely. And, providing a girl is able to handle firearms in case of emergency, she is just as safe on the top of a mountain as she would be in town.

Two Recent Decisions Having a Bearing on the Public Control of Forest Lands

By Louis S. Murphy, Washington

It may seem a far cry from city zoning regulations to public regulation preventing the devastation of privately-owned forest land, yet a little careful thought will indicate their very close kinship. City zoning ordinances seek to regulate the use to which an owner may put his land so that it may be in keeping with its surroundings. Its aims are in a measure dual, being at once restrictive,--in that land may be used only for the purpose indicated by the zone in which it is located, namely, residential, commercial or industrial,--and at the same time promotive of the best interests of the land owner,--in that by localizing major types of activities a form of development is stimulated which tends to secure the land being put to its highest use according to its location and suitability. Isn't this just what public regulation of forest land would seek to do, namely, prevent detrimental devastation of forest growth on land best suited to forest production and at the same time establish conditions within such forest zones as would promote the best interests of the forest land owner?

One of the two decisions referred to was handed down by the New Jersey Supreme Court concerning zoning regulations in the Borough of Clifton Park. Suit was brought by a realty company owning land in the borough, contending that the borough ordinance enacted under the State Home Rule Act of 1917 was invalid as improperly limiting the use of private property. As to the Act, the Court observed that the zoning regulations authorized by it were in express terms limited to those "designed to promote the public health, safety and general welfare." The opinion adds:

> "There can be no question about the validity of reasonable regulations touching the public health and safety. 'General welfare' is a broad phrase and perhaps would include matters not properly within the scope of the police power, but no doubt includes some that are within that scope."

The second decision on a similar subject, rendered by the Massachusetts Supreme Judicial Court, held that an ordinance segregating manufacturing and commercial districts from residential districts is authorized under the provisions of the Massachusetts constitution, as amended, empowering the General Court to limit buildings, according to their use or construction, to specified districts of cities. The court further says that independent of this constitutional provision such an ordinance might be warranted under appropriate circumstances at least to a limited extent in the interest of the public health, safety and morals, and adds:

> "The establishment of fire limits, the exclusion of wooden buildings therefrom, and the requirement of buildings of specified construction within them, are familiar police regulations of unquestionable validity. Restrictions respecting air spaces and distances between outside walls of buildings, interior fireproof walls, fire escapes and kindred matters, are not uncommon. * * * A limitation of the height of buildings varying according to different districts had been upheld before the amendment.
>
> "It has been decided quite generally, if not universally, by courts in which the question has been raised, that esthetic considerations alone or as the main end do not afford sufficient foundation for imposing limitations upon use of property under the police power. * * * Before the adoption of amendment 60, it was said by Chief Justice Knowlton * * *:

Two Recent Decisions Having a Bearing on the Public Control of Forest Lands (Cont.)

"'The inhabitants of a city or town can not be compelled to give up rights in property, or to pay taxes, for purely esthetic objects; but if the primary and substantive purpose of the legislation is such as justifies the act, considerations of taste and beauty may enter in, as auxiliary.'

"We think that this is an accurate statement of the property rights under the Constitution of the United States. While the Supreme Court of the United States has not decided, so far as we are aware, that the exercise of the police power can not rest on esthetic considerations alone as its sole basis, we draw the inference from what has been said on the subject that at present at all events that foundation, standing alone, hardly would be regarded as sufficient, but it may be regarded in a subsidiary way."

These two decisions taken together with the Wyoming natural gas decision previously referred to in these columns by Mr. Mangan and the Ohio gas and oil decision, together with the decision of the Supreme Court of Maine, rendered directly on the question of public control of forest lands, remove beyond the limits of a reasonable doubt any fear as to the constitutionality of State legislation on the subject of public control of timberlands.

WASHINGTON NOTES

Mr. L. J. Palmer, formerly Grazing Examiner, in Charge of Grazing Studies in District 4, now with the Biological Survey on Reindeer Investigations in northern Alaska, called recently at the Washington office.

Mr. Palmer has just returned from a 16-months' sojourn in the land of the midnight sun, and expects to spend the winter in Washington getting out reports on the possibilities of reindeer production on a commercial basis in that far-away country. His main work is being carried on in the Norton Sound country where there are numerous reindeer herds that have become established from a number that were imported prior to 1900. The total territory covered extends from beyond Point Hope on the north far into the interior on the Yukon. Nome, with a summer population of 2,000 and a winter population of 800, is the metropolis of the region.

According to Mr. Palmer, all phases of reindeer production, including range management, handling, feeding, breeding, and diseases and other pests, as well as marketing facilities, are being studied. The party consists of "Red" Johnston, also formerly of District 4, and two veterinarians. Mr. Palmer says it is great sport to "mush around" with a dog team when the thermometer is 40 or 50 degrees below. He covered approximately three thousand miles in this manner last winter. Last summer more than 4,000 miles were covered along the coast in a 20-ton schooner.

Despite its location on the outposts of civilization, the intense cold and long days and nights, Palmer says there is a lure to the place, and that it is easy to appreciate what Service has to say about the place, once you have been there.

James T. Jardine, Director of the Oregon Agriculture Experiment Station, erstwhile in charge of Grazing Studies in this office, was a recent caller on old friends in the Atlantic Building. Apparently, his new job is agreeing with him, although he says it gives him no time for play.

Forest Resources of the World: The McGraw-Hill Book Publishing Company has definitely agreed to publish the manuscript "Forest Resources of the World," by Raphael Zon. The book will consist of about 600 pages containing 14 folded maps, of which several will be in colors. The Secretary has granted copyright to the publishing company, reserving, however, the right of the Department to use the material in any publication it may find necessary.

It Can Be Done--If You're Alive: The Southern Appalachian Forest Experiment Station received 105 column inches of free advertising in the Asheville papers during September. This is exclusive of the publicity resulting from the recent visit of the Forester.

Why Not Hire a Hall: "Profitable discussion took place on the three 15-acre permanent sample plots, on the old cut-over areas, and on the timber sale areas."--Extract from Monthly Report of Forest Investigations.

FOREST PRODUCTS LABORATORY

Wold Leaves: We say this with almost dramatic pathos. The chaps in D-1 and many others elsewhere in the Service who are friends of our genial Fiscal Agent--and to know him is to be his friend--will sympathize with us in our loss. But then, he's still within the fold and we congratulate D-1 on his return to his old haunts round about Missoula. As fiscal agent of the Northern District, Wold takes over one of the biggest jobs of its kind in the Service. Tempering the sense of loss is the pleasure of the Laboratory in welcoming Mr. M. E. Fagan of the Washington office to the desk vacated by Wold.

The Metric System: The Ranger and other field men in the Forests East and West are little concerned with the various pros and cons of the metric vs. English system controversies. Doubtless the day is still far removed when the scale stick will be slapped onto the top log in a deck and the scale book be made to record the liters (or is it meters, or milograms) of wood in that particular stick. Good old board foot will put up a tough fight before he gives way to the new term, whatever it will be.

Here at the Laboratory the nature of the work is a bit different and while the yard holds many big logs that are discussed in the terms of board feet, inside most buildings the metric system holds sway to a large degree.

For instance, the sections of Pulp and Paper and Derived Products, largely devoting their research in chemical lines, use the metric system almost exclusively in their work. Timber mechanics use the metric system in weights up to 500 grams because it is more convenient than using pounds and ounces. On all large pieces handled in this section and in Timber Physics the English system is used, largely because the scales of sufficient capacity are all in the system in common use. For liquid measures the metric system is used practically exclusively throughout all the Laboratory, but for solid values (here come our friends--board and cubic feet) the regular system is used. The net opinion, after all is said, is that for all technical work the Laboratory prefers the metric system because of its obvious value in reducing errors and simplifying work.

DISTRICT 1 - NORTHERN DISTRICT

Logging Output Studies: The logging output or time studies which have been conducted in D-1 for the past two years will be continued this winter. During the past three months, studies on caterpillar-tractor skidding have been given the most attention. Two operations on the Kootenai Forest and one at Elk, Washington, have been covered. Up to the present time, data on a total of approximately 2,500 M feet of logs skidded by caterpillar have been secured. During the next four months, with the assistance of about twelve men from the western Forests for periods of about two months each, it is expected that additional information will be secured on tractor skidding as well as considerable data on sawing, skidding, sleigh hauling, chuting and chute, railroad and sleigh road construction.

Lodgepole Pine for Poles: Recently the Plant Engineer of the Mountain States Telephone and Telegraph Company at Helena, Montana, requested information as to the suitability of lodgepole pine for telephone poles and reenforcing stubs The office of Forest Products has furnished the company with considerable data on the subject. Should some of the larger pole users in the country decide to use this species for such purposes, a big step would be made in the better utilization of our lodgepole pine stands.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

More Trespass Cases Than Usual: In spite of the fact that the demand for range throughout the District was not as heavy as usual the past season, and the number of stock actually placed on the range much smaller than in previous years, and also in spite of the fact that Supervisors are settling many small cases, the District office is handling more trespass cases than has been customary in past years when the demand for range was heavier. Probably this is partly accounted for by the fact that because of financial conditions less attention was paid by the stockmen to livestock grazing on the range. It is also partly due, no doubt, to an increased activity on the part of local Forest officers in detecting trespass.

Minnesota Planting: Six hundred acres of land were planted with three-year old Norway pine seedlings on the Minnesota Forest at a cost of $4.99 per acr The excellent weather conditions which prevailed during the planting season permitted planting of a much larger acreage than was anticipated. Seven hundred trees to the acre were planted.

Fire on Nebraska Forest: On November 1, while a crew of men, under the direction of Ranger Janouch, were burning a firebreak along the west boundary of the Bessey Division of the Nebraska Forest for the protection of the plantations, a very sudden and high wind swept the fire across the ploughed line and beyond the control of the crew. The fire eventually burned itself out at the Dismal River after having run over 28,000 acres of Forest range. The Halsey plantations were well protected by fire lines and the fire did not come within five miles of the trees. This fire illustrates the ease with which fire may spread in the prairie country and the necessity for adequately protecting the plantations.

Forest Officers Transferred: Supervisor Harry H. French, who has been on the Holy Cross National Forest for 16 years has been transferred to the Uncompahgre, where he will succeed Supervisor Dwight S. Jeffers.

Supervisor Alve L. Richey of the Arapaho takes the place as Supervisor of the Holy Cross and John V. Leighou, Forest Examiner, from the Harney, becomes Supervisor of the Arapaho.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Word from the Frozen North: "Just returned from Asia," says "Red" Johnston in a letter from Unalakleet where he and Palmer make headquarters in their Alaskan reindeer work for the Biological Survey. He then explains that he and Palmer with their boat "Hazel" had made a hurry-up trip to the Siberian Coast on telegraphic advices from Washington to effect the rescue of a stranded mountain sheep hunter from New York. The New Yorker, however, made other arrangements with respect to the rescue and passed "Hazel" in the night on a trading vessel bound for Nome. But Johnston and Palmer got a trip to Asia out of it anyway.

Schumacher Resigns: Forest Ranger Francis X. Schumacher, of the Salmon Forest, has tendered his resignation effective October 31. Mr. Schumacher is leaving to become a professor at the University of California, where he will receive a very substantial increase in salary. The Service wishes him success in his new field of labor.

Girard and Stewart Go North: Logging Engineer James W. Girard and Mr. S. S. Stewart have returned from the Cottonwood sale on the Wyoming. They will make an inspection of the tie sales along the Yellowstone Branch on the Targhee and Madison Forests.

D-1 has a tie sale just over the continental divide from where Stoddard is selling ties on the Targhee. It is the desire to correlate the policies on the two Forests which are in different Districts, taking advantage of the opportunity of representatives of both Districts, going over both areas at the same time. Mr. Stoddard reports about 40 choppers on the Targhee.

DISTRICT 4 (Cont.)

Many Predatory Animals Killed: Hunters of the State and Federal Governments have killed 156,150 predatory animals on the western ranges. This number represents the activities of the 16 western States, and does not include animals poisoned. Nevada leads with 22,068, Utah being a close second with 21,712. It is estimated that each wolf and mountain lion destroys $1,000 worth of livestock, while the value of livestock killed by each coyote is placed at $50.00.

Ranger Bill Says:

The trouble with most technical men, says Super. Jim, is that they always have plenty to say but don't know how to say it.

I wonder how many of the "experts" at the Fire Conference have fought a real fire in the last five years except on paper.

It or'ta be a heap easier to cut red tape now that its been made "expendable."

DISTRICT 5 - CALIFORNIA DISTRICT

Lumber Company Burns Slash: Recently the Weed Lumber Company burned approximately 60 acres of slash on skidder logging ground in a stand running about 2 M per acre. About ¼ mile of line was built to keep the fire from spreading. The remainder of the fire line consisted of wagon road and railroad grade. It took a crew of 5 men one day to build the ¼ mile of line and clear out the other 1¼. The area was burned at night and watched for two days and one night. The second day the crew went over the area and burned out a few small patches that had not burned clean. The cost of the line construction and burning amounted to $1.87 per acre or 9¢ per M. This is regarded as a minimum cost rather than an average, as much less than an average amount of line had to be built. It is reported that the fire killed from 80 to 90 per cent of the reproduction under 4 feet high and from 30 to 50 per cent of the trees from 4 feet in height up to 6 inches in diameter.

To sum up: $1.87 per acre has been invested in a type of protection which killed practically all of the advance growth. At present the Forest Service is furnishing fair protection at the rate of 1½¢ per acre. Excellent protection could no doubt be afforded for 5¢ per acre. At that rate $1.87 per acre would have protected the area for 37 years.--T.D.W.

More Pure Bred Sires: That the grazing permittees on the Little Walker community cattle range do not intend to allow the present depression of the stock business to hinder the future interests of their stock, even though it cramps many of them, is evidenced by a resolution they adopted the other day at their annual meeting in Minden, when they unanimously agreed to allow only pure bred bulls on their range in the future.

The center of fire was in determining the breed which was finally adopted as the beef strain of Herford.

Thirty animals will be selected and purchased by a committee appointed for this purpose and the day of the "scrub" on the Little Walker range is no more.

A Record To Shoot At: On the Sacramento District of the Shasta Forest this season, Ranger Solari handled a total of 73 fires. Although a number of these were "C" fires, none of them reached large size and the suppression costs were small. Several fires in the dense brush fields around Sisson were successfully handled, an achievement that will be recognized by those familiar with past history of fires in that region.

DISTRICT 6 - NORTH PACIFIC DISTRICT

The Morrison Creek Road extending from the Columbia Forest boundary, about 3 miles north of Trout Lake Valley, up the slopes of Mt. Adams to Morrison Creek, will be completed during the present month. About 6½ miles of this road was recently graded and is now in good condition for driving. The maximum grade will not exceed 8 per cent, and most of the road is under 6 per cent. The cost of the road has been below the estimates and it will be possible to extend it an additional 2 miles to Cold Springs, located at an elevation of about 5,500 feet, within 1½ miles of timber line on Mt. Adams. Camp ground site is available supplied with unusually fine water from Cold Springs. This camp ground will be developed when the road is completed. There is no question but what this will be the main base for mountain climbing parties.

Strawberry Lookout House Again on Top: At last there is a standard lookout house anchored upon Strawberry Mountain, on the Malheur, at the identical point where the original steel house once stood before a gale displaced it and blew it down the mountain side. It is believed the cabin will withstand the wind. This point is exposed to exceedingly high velocity air currents--located as it is at the exact top center of a straight deep canyon leading in from the southwest. Before the standard wind gauge blew off of the peak a gale of 70 miles was recorded.

Putting It Over--Under Difficulties: The recent Grant County Fair, in eastern Oregon, was a great success. Three Forest Rangers of the Malheur were fighting fire at the time, but with the cooperation of the State Game Department a pavilion was filled up with evergreens, fire signs, flags, etc., and the schools of fish fry placed by Warden Hazeltine made the display very presentable and attractive. The weather was ideal and attendance good.

Ranger Elliott of the Santiam saved a million fish last summer in Moose Lake by stopping and otherwise plugging up fissures in the bottom of the lake, and thus preventing the dwindling of the water. A similar successful operation was performed last year on Pamelia Lake. The Santiam Fish and Game Association now calls the Rangers "lake doctors" and are most appreciative of this work.

DISTRICT 7 - EASTERN DISTRICT

Ranger Erich F. Stuewe of the White Mountain National Forest visited conservative Boston attired in a new regulation Forest Service uniform. While waiting in the lobby of the Brunswick Hotel he was approached by Stranger #1, who inquired: "What part of the West do you hail from?" After a short time Stranger #2 introduced himself with the following: "Do they have many killings where you live?"

Stuewe insists that it was the clothes and not the man that misled his Boston friends, and suggests that the Boston Transcript acquaint its readers with the new Forestry uniform so that in the future when Bostonians visit the White Mountains they would not be caught napping with the idea that they are recreating in the wild and woolly West.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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YOU TELL 'EM

By F. V. Horton, Deschutes

We have just finished fighting over our 1921 fires, with a pen and pencil this time instead of a No. 2 shovel and road rake. We have filled in all the cute little blanks that were so kindly left on the Fire Report forms for the Supervisor to hone his wits on, and now that it is all over we feel constrained to "bust into print."

At the top of our fire report form there is a blank place that asks,--yea, actually pleads for the "NAME OF THE FIRE." Yet this year there were two fires which arrived at the Supervisor's office anonymous. They were like the Scotchman's contribution check which was unsigned because the donor wished to remain unknown.

The form also asks for the "AREA OF THE FIRE IN ACRES," not "squrds" or sq. ft., or sq. rds. Probably one can not estimate the area of a camp fire in acres, but we can get away from this "rods" business. Who ever uses a rod to measure land with anymore anyway? Ten square chains equal one acre, eighty chains equal one mile, sixty-six feet equal one chain, and so on. That's the way our public land surveys were made, so why drag in yards and rods and what not?

Under the heading, "DAMAGE, ESTIMATED AMOUNT" we have a column "NATIONAL FOREST LAND, AREA BURNED OVER, ACRES." On a number of reports we found the letter "A" under this heading. It took three cans of Prince Albert and a gosh awful lot of cussing to figure out what we thought was meant and the matter is still open for debate. Now we admit that our guesser is hitting on all four cylinders most of the time and that in our idler moments we have been prone to ponder over secret codes and ciphers, but it's too much to ask us to do it during office hours when the District Office is howling for the finished report.

Now we come to "DAMAGE." If we agreed with all the reports that came in this year we would straightaway order a set of rubber stamps bearing the words NO DAMAGE, or we would have them printed on about half the forms. Listen to this:--Fire burned six square rods. "NO DAMAGE." Now if this fire burned six square rods it had to have something to burn or it would not have covered this area. All right, something then was burned, we'll have to admit that, and if something was burned, something was lost unless the benefit of burning offset the value of the material burned.

Now here is another: "Area of fire four acres, Jack Pine, NO DAMAGE." Supposing that the entire area of your Ranger District was 4,000 acres and it was entirely covered with "Jack Pine" (whatever that is) and you had, during the season, 1,000 fires of four acres each. According to this report you would not have NO DAMAGE but your District would be gone. How about it?

Another one: "Area of fire ½ acre." One man spent two days putting it out but there was NO DAMAGE.

But here is one that takes the silver mounted "mad-ax"--"Area of fir 25 acres in Yellow Pine and Yellow Pine Reproduction. Five and one-half man-days spent in putting it out," but there was NO DAMAGE. Suffering shades of Teddy Roosevelt, how do they get that way?

You Tell 'Em (Cont.)

Here is one that may be O.K., but a word of explanation would help our feeble intellect. "Area of fire 4 sq. rds. Drove 22½ miles in auto, spent 7½ man-hours on fire." Either this was some hand-embroidered fire, or the dang roads need fixin.

Under "YOUNG REPRODUCTION" the form asks for "Type," "Average number of trees per acre," "average age" and "per cent killed." Now it may appear that all this was put in simply to fill out the page and make the form more plump and symmetrical, and it may be that taking it all in all, there is considerable chance for errors here, but we know this for sure, the field man's guess is a durn sight better than the office man's, and if it is not filled in in the field at the time the report is made out, we are going to lose some information that is needed and required.

Now a last small item which may seem a mere trifle to most of us, that of nomenclature of tree species. In other words, the common names of our common trees. Will some one tell us what "Jack Pine" is? We have Black Pine, Bull Pine, Jack Pine, Red Pine, Oregon Pine, Sugar Pine, Yellow Pine, White Pine, Shevlin Pine, Deschutes White Pine, Lodgepole Pine, Black Jack, Carabog and Jimpsum Weeds. (Boy, page Mr. Sudworth!)

It appears that we, as foresters, should at least name our tree species correctly and if it's Lodgepole Pine call it that and nothing else.

Forestry a Part of Agriculture

The following resolutions were received by Secretary Wallace from the Penobscot Forestry Club:

"WHEREAS, in discussion of the contemplated reorganization of the Executive Branch of the Federal Government, it has been proposed to transfer the Forest Service, or parts of its organization, from the Department of Agriculture to some other Department or Departments; and

"WHEREAS, both the administrative and investigative activities of the Forest Service are concerned primarily with the production, harvesting, and utilization of successive crops of timber, both on wild lands and on farm woodlots, and are naturally coordinated with the other activities of the Department of Agriculture; and

"WHEREAS, the administration of the land, timber, grazing, and other resources of the National Forests, and the investigative work in forest protection and production, lumbering, and wood utilization at the Madison Laboratory and elsewhere, are intimately related, and, as has been proven by experience, can not be conducted successfully for the public interests otherwise than under a single governmental bureau; and

"WHEREAS, the efficiency of the Forest Service, with its present organization, and as a part of the Department of Agriculture, is generally recognized and highly appreciated by the public and by the wood-using and grazing industries; and

"WHEREAS, any action that would modify the present general status or organization of the Forest Service would seriously impair its efficiency and the value of its service to the public and to the industries which cooperate with it in administrative matters and investigative work;

"RESOLVED, that the Penobscot Forestry Club, comprised mainly of foresters in private employment, is absolutely opposed to any transfer of the Forest Service, or any of its activities, from the Department of Agriculture, and believes that such transfer would be contrary to the public interest.'

Oregon's Marble Halls

By John D. Guthrie, D-6

In spite of six miles of trail and a strenuous crawling and scrambling through devious underground passages, in some cases none too dry, 1,080 visitors registered at the Oregon Caves during the past summer. These caves are located on the Siskiyou Forest and are included in a National Monument. The visitors were from 25 different States, the greatest number coming from Oregon, California and Washington, though such far eastern States as New York, Pennsylvania, Maryland, West Virginia, New Jersey, and Tennessee were represented.

The Forest Service, in cooperation with the Bureau of Public Roads, is building a road to connect the caves with the Pacific Highway, and expects to complete it for the 1922 season. In addition, several iron ladders and two iron stairways are being added and the more strenuous passages enlarged so that corpulent or rheumatic persons will have no difficulty in going through the caves with comfort. With the proposed improvements completed by next spring, another major scenic attraction will have been made available in southern Oregon.

What Bothered Ben Franklin

By Paul D. Kelleter, Washington

In 1752 Ben Franklin helped in the organization in Philadelphia of the first American fire insurance company popularly styled Contributionship. Its famous leaden "Hand-in-Hand" signs placed upon the outer walls of insured buildings were once a familiar sight in Philadelphia and more than one of them, tradition says, were pulled down during the Revolution to be remodeled into bullets for Washington's Continental soldiers.

This company had fame for several reasons, one being that the Contributionship at first refused to insure buildings closely surrounded by trees. Just what bothered Franklin and the others to take that stand is not disclosed. They changed their minds later and were less hostile to green trees.

However, this change came about through the organization of the Mutual Assurance Company, which did not share the same antipathy to trees. In fact, it was known from its escutcheon as the "Green Tree." This item is submitted so that it may serve the researchists as another hook on which to hang their prospective studies on all forest fire factors. Perhaps a study of Ben Franklin will help out on the 1922 study.

It's Getting Across!

"The trails and the camps of the forests and the high hills are placarded liberally with signs warning against carelessness with fire. At every turn of the path, at every camp and in every conspicuous place there are signs calling attention to what may ensue from lack of care with fire. These signs point out that a discarded match, or a smoldering cigar or cigarette butt may light a conflagration that will destroy lives and property. In the course of time these iterated and reiterated warnings so sink into the mind of the traveler in the woods that unconsciously he begins to see that his matches are wholly dead before he throws them away and that his camp fire is surely out before he leaves it. Everyone who has been much in the mountains can bear witness to the fact."--Register, Eugene, Oregon.

FOREST PRODUCTS LABORATORY

Writes A Big American Electric Company: "We are interested in the development of a paper .0005 inches or less in thickness for use as insulation in static condensers. This paper must be made free from metallic and carbon particles, which conduct electricity. In addition it must also be a very uniform sheet of paper."

After making ineffectual efforts to obtain paper of these specifications commercially, the electric company turned to the Laboratory. With the substitution of some bronze fittings and brass piping for certain iron parts of our present equipment, the pulp and paper staff expressed a willingness to tackle the problem.

FOREST PRODUCTS LABORATORY (Cont.)

Plywood Writing Paper: No, the Lab. hasn't made it, nor suggested using the versatile plywood for carrying the harsh, crisp utterances of the business man or the sweetly scented thoughts of the ardent wooer. But our mail last week brought us a plywood letter enclosed in a plywood envelope. A sheet of silvery tinted wood, microscopically thin, with a backing of tissue was the stunt. It carried an announcement of a wood creosoting company. We've made plywood hats and plywood bats and plywood this and that--but some one beat us to plywood correspondence makins'. We mourn.

National Forest Summer Homes and the Laboratory: The connection between the two well known "institutions" in this heading is rather remote; in fact, one might sustain a mental rupture, so to speak, in guessing the relation that turned up in the Laboratory mail recently. It appears that the increase in summer home building on the Pecos River on the Santa Fe Forest down in D-3 has raised a demand for rustic furniture. A wide-awake local resident is extending his activity in the direction of supplying this new market and his first step, naturally, led him into the realm of the Laboratory--the drying of a suitable local wood prior to conversion into furniture. He lit on blue spruce branches as his best raw material, but the first drying efforts resulted in badly checked stock and Lab was S.O.S.'d for help. The embryo furniture manufacturer was given a few pointers, but even our drying sharks admitted he had a hard problem.

WASHINGTON NOTES

Embryo Foresters: The Intercollegiate Association of Forestry Clubs in its October NEWS LETTER reports that 1,315 students are taking forestry courses at 24 schools and universities in the United States, together with 83 students in three like schools in Canada. The New York State College of Forestry, Syracuse University, leads with an enrollment of 284, College of Forestry, University of Washington has 113, and School of Forestry, Oregon Agricultural College, 110.

Pennsylvania Department of Forestry reports 5,777 visitors to 39 fire towers during the month of October. The Department now has some 60 up to date steel fire lookout towers in service. Commissioner of Forestry Gifford Pinchot states (knocking on wood) that if the present favorable fall season continues, all existing fire records in Pennsylvania will be broken.

Lucy Charlton Kellerhouse, of the Forest Service, has collected seven of her forest stories into a delightful book entitled "Forest Fancies." These stories of trees and woodlands are charmingly told and profusely illustrated by Forest Service photographs. The book is of interest to both grown-ups and children.

W. D. Sterrett Resigns: Forest Examiner William D. Sterrett, one of the old-timers in the Service, resigned October 31. He came into the Service as agent July 1, 1903, and from 1903 to 1907 had various assignments in the East, including State cooperation, management of private lands, establishment of sample plots, and reconnaissance. From 1907 to 1910, he was in the Bureau of Forestry of the Philippine Islands. Since 1910 he has been a member of the Office of Forest Investigations in Washington. Several Government publications have been printed of which Mr. Sterrett is the author, together with various articles in outside publications.

We shall all miss "Bill" Sterrett around the office here in Washington, and he has our best wishes in his new work. It is understood that he is undertaking private forestry work with headquarters in this city.

* * *

THE BROOK

(As Tennyson Might Have Written It)

The forest once my source is gone, I raze the hazel covers;
I sweep the dwellings from my banks, once filled with happy lovers.
And now and then I rave and roar, just like a brimming river,
For though I still may come and go, I'll soon be gone forever.

New Photographic Price List:

Photo. Prints	3¼ x 4¼)	$.06
" "	3¼ x 5½)	.06
	4 x 5)	.06
" "	4¼ x 6½)	
" "	5 x 7)	.10
" "	6½ x 8½)	.12
" "	8 x 10)	
	7 x 11)	.17
Solar Bromides	(square foot)	.25
Enlargements	(square foot)	.50
Lantern Slides	(uncolored)	.35 (each)
Lantern Slides	(colored)	1.00 (")

DISTRICT 1 - NORTHERN DISTRICT

The Coeur d'Alene Forest is completing a timber sale covering 160 acres. The estimated volume of this sale is 3,500 M. feet of white pine and 800 M. feet of white fir. With a stumpage price of $8.00 per M. for white pine and $1.00 per M. for white fir, the quarter section will yield $28,800 stumpage, or $180 per acre.

The Chemical Plant at Eureka, which will be operated by the International Chemical Products Company, was visited by Mr. Whitney of the Office of Products on October 7. Four large buildings have been completed and practically all of the machinery and equipment has been installed. Dr. Acree, formerly connected with the Madison Laboratory, has been supervising the construction work and will be in active charge of the entire plant. About 2,000 cords of larch butts have been collected in the yard. The company has arranged to purchase waste material in the form of slabs, edgings, etc., from the P. L. Howe Lumber Mills at Eureka and there is an abundant supply of raw material in sight. Mucic acid, oxalic acid, alcohol and other products will be manufactured from the larch. It is probable that within the next year or so the wa chips from the digesters and also possibly limbs and tops brought from the woods will be used in making paper pulp. The company anticipates extending its scope of operations as soon as the mucic acid production is well under way.

Larch Block Supports Unsatisfactory: In 1911 four round blocks about 40" in diameter and 2½ feet long were cut from pitchy larch buuts and placed as foundation posts under the corners of the barn at the Seeley Lake Ranger Station. It was predicted that these blocks would last indefinitely, but at the end of ten years they are found to be decayed and the building has settled considerably. The same condition was found with blocks used under the cabin at the station. These were removed last summer after being in service about 11 years and replaced with cement piers. In both cases, the blocks were shaky from decay, ring checked and partially split. Where the block is required to carry a heavy load and the top is only a few inches above the ground, the water soluble substance found in larch butts does not appear to be an effective preservative. It should not, however, be assumed that larch is not a durable wood when put to other uses. The larch base logs which rested upon the blocks mentioned above are perfectly sound, and when used for fence posts, poles or piling, are rated as second only to western red cedar in durability.

Ranger Bill Says:

I'm strong for an office that don't look like a museum, says Supervisor Jim.

Ain't it queer how a big brainy Forest officer'll fret and stew over a little thing like wearin' a uniform.

If they don't give a Domestic Science course soon, I'll have to get married, remarked Ranger Nat Forest.

THE RANGER

By Henry Herbert Knibbs

Up from the sage to the pinon, up from the pinon to pine,
Viewing his mountain dominion from valley to far timber-line,
A lusty young ranger came singing a song to the musical drone
Of his pack-horse's bell, that was ringing a queer little tune of its own.

"Step along, you, Lazy! Hop along, you, Blue!
Don't you let the evenin' get ahead of you!
Yonder goes the sunlight slidin' down the Pass,
And a mile to make Chilao and water, wood and grass.

It's coffee, beans and bacon--and then a little smoke.
And some think that rangin' is nothin' but a joke;
Sweatin' with a trail crew, powder, pick and drill,
First you got to excavate and then you got to fill.

Linin' up your switch-backs, cuttin' down the grade--
It ain't exactly loafin' and smokin' in the shade.
Pullin' down a pay check in the Service means
Raisin' plenty blisters and wearin' out your jeans.

Mebby-so it's healthy when there's nothin' more
Than workin' only twelve hours out of twenty-four;
Mebby-so you're sleepin' when 'tingle' goes the phone;
'Fire has been reported up on San Gorgone.'

Fordin' when the stream's high, ridin' in the rain;
Livin' close to Nature is givin' you a pain;
Slippin' on the round rocks, splashin' through the dark,
Wishin' you was Noah, squattin' in his ark.

And you got to sabe packin'--of course you got to ride;
You got to be a doctor, you got to be a guide,
Carpenter, surveyor, timber-cruiser, cook,
And you got to know a whole lot that isn't in the book.

You got to sabe grazin'--and how to draw a lease;
You got to listen both ways and try to keep the peace.
When you ain't a-dousing camp fires left by city sports,
You're settin' in your cabin makin' out reports.

Oh, it's great to be a Ranger and with the Rangers stand
With sweat upon your forehead, a shovel in your hand,
Mendin' trails and ditchin' until your back is broke;
Oh, it's coffee, beans and bacon--and then a little smoke."

Over the sage and the pinon, over the spruce and the pine
The midsummer moon held dominion from valley to far timber-line.
A star on the concha was gleaming. Asleep in his rowdy and jeans
A lusty young ranger was dreaming of--coffee and bacon and beans.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Winter Survey Work: During the winter period, a number of men from the western forests are to undertake timber survey work on the Harney Forest in South Dakota and the Superior Forest in Minnesota. According to present plans, a nine-man party will be maintained on the Harney and a seven-man party will be on the Superior. The plan is to push this work as fast as possible during the coming winter, since on both Forests there is keen demand for timber and several applications have been received for the timber which is to be cruised. Sales have already been made within the area cruised on the Harney Forest during the past summer. It is expected that a sale involving at least 100 million feet with utilization of practically all material 4 inches and over in diameter in trees designated for cutting will be made on the Superior.

DISTRICT 2 (Cont.)

The question of Grazing Waivers has been introduced by the local directors of the War Finance Corporation in connection with loans to stockmen who have National Forest permits or preferences. One of the banks, the other day, sent over for 25 or 30 grazing waiver forms with the idea that the National Forest permittees, as security on their loans, should waive to the War Finance Corporation their preferences, the same as they would require the assignment of a pasture lease or any other item in connection with the running of the stock and which would bear on the security of the loan. The local representatives of the War Finance Corporation simply wish to make provision for running the stock if it should become necessary to foreclose on the loan.

The Saguache Livestock Association has sent a telegram to its representatives in Congress asking for a complete remission of the grazing fees, and bases its request on the statement that other lines of industry were aided during the war, but the livestock industry was instructed to carry out the request that more livestock be produced; and conditions have been so much reversed since the war that they find themselves with livestock on their hands that can not be disposed of except at tremendous losses.

DISTRICT 4 - INTERMOUNTAIN DISTRICT

Right There's Where He Made His Big Mistake: A certain permittee on one of our Forests approached the Supervisor stating that he was short his permitted number of cattle and desired to get nonuse for the shortage. The Supervisor was suspicious and a few days later started an open range count of this permittee's stock. It was found that the permittee had a considerably greater number of stock on the Forest than his permit allowed. He paid $27 in settlement of the trespass of the excess cattle. The Forest Service is now considering a reduction in his grazing preference.

Cooperation on Wasatch: O. P. Skaggs, who operates over thirty cash stores in this vicinity, recently sent us a letter agreeing to operate a store for the Utah Outdoor Association camp in Big Cottonwood Canyon and maintain the same prices as in his stores down town. This was on condition that the Utah Outdoor Association would furnish him a building. He realizes that it will not be a money-making proposition, but states that he is willing to do this as his contribution towards the institution. He also enclosed a check for $50.00 to be applied on the construction of the building.

The Utah Outdoor Association accepted his offer, purchased the material, and through the cooperation of Rangers Green and Richards, the store is now being constructed.--Wasatch News Letter.

The Sensational Story of a Lost Key: The following is an extract from a Form 858, submitted by Ranger A. P. Christiansen to account for a lost key:

"I was riding one of my saddle horses toward my pasture gate, and as we were near the same I took the F. S. key out of my pocket, when suddenly she took a nose dive, tail spin, looped the loop and several other things that I did not quite get, shortly after I found myself in the meadow minus the saddle horse and the key, a thorough search was made for the key but was never found and I am quite certain it never will be."

Washington Visitor: Assistant Forester Herbert A. Smith arrived in Ogden yesterday afternoon over the D. & R. G. Railroad from Denver, and will spend most of the week here in connection with our Public Relations activities. Mr. Smith expects to visit some of the other western Districts on this trip and also to attend the Fire Conference at Sacramento later in the month.

Relating to the Wonder Car: Once upon a time, not many moons past, a certain District Engineer, on a fine Sunday afternoon, returning to his place of abode, after having put in some hard licks for Uncle Sam, had the misfortune to have his iron horse, a familiar sight on the streets of Ogden and formerly, it is understood, upon numerous of the Forests, run into, over and upon by a careless youth operating a Buick.

DISTRICT 4 (Cont.)

The aforesaid District Engineer, after having extricated himself, eloquently expostulated with the wrongdoer and sought sundry damages. This to no effect, however. For said the youth, "What did you want to get in my way for?"

Thereupon the aforesaid District Engineer solicited the aid of the Assistant to the Solicitor, who prepared a complaint and filed same, which was promptly demurred to. Demurrer being overruled and the complaint of the District Engineer sustained, yet defendant and his attorney were obdurate.

Upon their return from an arduous season in the field, the District Engineer sent two of his trusties down to the intersection in question for the purpose of making a careful survey thereof, so that his right and the wrong of the defendant might the more clearly appear to the Court.

But alas, these surveyors were seen by the defendant, who took a tumble to himself, albeit at the eleventh hour, and after a hasty consultation with his attorney, the latter requested that no more surveyors adorn the vicinity of the accident.

A check has just been received in payment of the damages and may the "Wonder Car" perform unmolested forever after.

DISTRICT 5 - CALIFORNIA DISTRICT

Lectures by D. O. Men: A course of seven lectures will be given this winter by members of the District office before the Forestry students of the University of California. District Forester Redington will give four of these, dealing with National Forest Administration and Policy, Mr. Woodbury two on Silviculture and Marking in Timber Sales, and Mr. Hill will discuss Forest Utilization.

Quite True: The $25 fine which a Salinas man paid for killing game out of season would have kept him in fresh meat for, lo, these many moons.--Clipped.

Colonel Greeley took his first flight over the Eldorado Forest, in order to get first hand information on aerial patrol. He was piloted by Cadet Hedrick, who had steadily flown this route during the past summer. On landing the Chief Forester expressed himself most enthusiastically regarding the experience. He was amazed at the ease and clearness with which details of the terrain could be picked out from the air.

Allen Resigns: Our old friend and coworker, Shirley Allen, has resigned as Supervisor of the Angeles Forest and is going into private business in Los Angeles. Our best wishes go with Allen in his new venture and we know that we can count on his continued cooperation to help spread the gospel of Forestry. Mr. Charlton will again assume charge as Supervisor when Allen's resignation takes effect.

The Rope Cinched It: Ranger Boothe and Deputy Supervisor Joe Elliott, while traveling via Buick from Dorrington to Big Meadows, spotted a fine little fire burning merrily near Big Meadows. "Guess we better look around a little for clues" was the only comment for a short while. The "look around" produced egg shells, black jack chewing gum wrappers, Kelly-Springfield cords tracks, and a piece of cotton rope. Insignificant enough apparently, but a Buick always has room for one more bundle, so in goes Mr. Rope. A Ranger just can't help following tracks--he's made that way, and it makes no difference that the tracks might lead him through three Forests, viz: the Stanislaus, the Mono and the Eldorado. Neither does it matter that the distance traveled was 126 miles. But it does matter that when Elliott and Boothe arrived at Silver Lake, there, after a long hard chase, were the much-sought Kelly-Springfields. There was also one Mr. C. H. Holmes, a banker of Stockton, and his happy little party of campers. "Absolutely impossible," says Mr. Holmes. "More than impossible" say all the ladies. "Never camped there," says somebody else. Now Rangers don't like to tell people that they're mistaken, nor do they like to intimate that they're just plainly falsifying, but "duty is duty," so says Joe and Boothe, "let me have a look at that piece of rope you're using, if you don't mind." The rest any Law Enforcement man who uses his imagination can finish. Mr. Holmes is $50.00 wiser than he was early this summer.--Stanislaus.

Service Bulletin
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(Contents Confidential)

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December 12 to 19, 1921.

Pigeons on Idaho Protection Force

by James E. Scott, D-4

The carrier pigeon has won a permanent place in the fire protection system of the Idaho Forest and will be installed at all protective camps on his district next season, is the assertion of Ranger Walter A. Estep.

In April, Estep purchased four pair of homing pigeons, hatched late in February and just off the nest. Self-feeding hoppers for grain and grit, plus the ready access to fresh water, enabled Estep to be absent from the station for long periods without worry as to the feeding of his birds.

Short flights were tried at first and soon the birds were making ten-mile trips in fifteen minutes.

Nesting interfered with active flying for a time, but two birds were taken to the Powelson Creek fire about three miles air-line from home on August 20. Packed in a small cracker box, on a rough horse, traveling a rougher trail, the birds were subjected to a severe test, but seemed to be none the worse for the trip on arrival at the fire.

When starting to the fire, it appeared from the heavy volume of smoke rolling up that more men might be needed. Estep took along the only neighbor within ready reach and arranged with a lady to stay at his station phone and watch for the arrival of the pigeons. Miners were expected to pass the station that morning and Estep instructed his helper to send these men to the fire if no word arrived from him before they had passed.

On arrival at the fire it was quickly seen that the two men could handle it, so Estep immediately released one bird with a message to that effect. As soon as the fire was trenched and safe, the second pigeon started for the Station with the word. Savings to the Service? The miners were not sent to the fire. The Government packer who reached the Ranger Station just after bird number one arrived was saved a needless trip. Deputy Supervisor Casner was about to leave McCall, twenty-five miles away, by auto, for the fire when the pigeon's message was phoned in and stopped him. Add to these a lot of worry saved all along the line.

After the fire season Estep experimented. Two birds were taken to McCall by pack horse--kept at McCall over night and released with messages for his station. Thirty minutes after release the birds were in the home coop, having covered at least eighteen miles air-line, over a high mountain range. Two others were taken to the Buckhorn trail camp and one released immediately upon arrival, about dusk. In this case the pigeon had to rise abruptly out of a deep canyon and then cross over two high ranges. The bird was in the coop at home, eighteen miles away, before dark. The other bird was taken the next day in a back pack into the high peaks of the Buckhorn country and flew from there to the home coop with a message in less than an hour--a good day's travel for a man and horse.

Estep has his traps in the pigeon house connected with an electric switch which rings a gong in the station upon the return of a pigeon from a flight. The self-feeding arrangements may keep the birds a little too

Pigeons on Idaho Protection Force (Cont.)

well fed for speed flying, but this disadvantage is offset by making the work of looking after them almost negligible and leaving the "unfortunately" unmarried Ranger free to get away on long trips.

Estep has found by experience that pigeons will stand hardships--that they will make immediate and quick flights home from any point to which they are taken, carrying a message of one-third note sheet size, rolled in a short cylinder and tied to a leg, and that the feathers protect the message from rain. They are little trouble and less expense--the total maintenance charge being about two-bits per bird per month.

Estep urges that two pigeons should be part of the equipment carried by the first man to every fire--and that their use on many other lines of our work is entirely practicable.

Outguessing Congress

by Paul D. Kelleter, Washington

A special activity in the Washington office, not to be found in the field, is that of outguessing Congress. Opportunity for the indoor sport is continuous.

A case in point: For years the Forester has made his annual appearance before Congress to get approval for the fire deficiency. This has generally been in December after Congress has got back into the harness and the committees work is well under way. A mass of information is needed to convince the members of Congress of the need for the money, that the expenditures were necessary because of the existing emergency and the absolute need for expenditure to protect Government property.

Each year some difficulty is encountered in getting good data together because the need follows so sharply the close of the fire season and because all field data have not been compiled.

In the expectation of beating out the Committee this year and having up to the minute data the Forester advanced the call for fire statistics from the field by several weeks. He set November 10 as the day. But here is what Congress did. The Committee held its session November 9, approximately six weeks earlier than usual.

Fortunately, all but two districts had their final data in Washington prior to November 10, which made it possible to compile up to the minute statistics for the Forester. For the missing Districts, data obtained from the current fire reports were used.

It is realized at this end that the fire season is not over and packed away for the winter as early as November 1, but since there is need for the information at that early date so that funds may be obtained from Congress to keep the Forest Service a going concern, the answer is apparent.

Advertised by Our Friends

By Albert Wiesendanger

One of the most effective fire prevention exhibits installed at the Eagle Creek Camp Grounds on the Oregon National Forest is the small experimental nursery plot, about 15' x 15'. This exhibit contains four plots of trees, Douglas fir, white pine, noble fir, and silver fir. There are about 1,500 trees of each kind. A neat signboard is on each plot giving the name of the trees and the age, which is 1 year. A larger sign tells how the Forest Service is growing young trees like these, at the Wind River Nursery and how each year areas are reforested with such trees where it is impossible for nature to do so. Another sign reads "NOTE SLOW GROWTH--PROTECT THEM FROM FIRE." Another neat sign points to a large nearby Douglas fir tree that is about 300 years old. As at first planned, it was thought that the nursery bed would interest the many visitors that spend the day on the camp grounds, but owing to the splendid location which Forest Examiner J. F. Kummel selected when putting in the plot, another and more important use is being made of the plot. The nursery bed is located along the side of the road where every car must pass it when leaving the camp grounds. During the day there is on an average of nine sight-seeing cars known as the "Tyrell Trips." Each car carries not less than eighteen passengers. In addition the new Columbia Gorge Hotel bus and several private sight-seeing cars all make Eagle Creek camp grounds one of their main objective points. The drivers of these various sight-seeing cars have all familiarized themselves with the Forest Service method of reforesting burned-over areas to such an extent that even an experienced forester would be surprised to hear the lecture that is given to the passengers on each car while making the loop through the main camp grounds. By the time the driver's little lecture is about completed the car arrives at the nursery bed and here a two-minute stop is made. It is most interesting to see how the passengers, who hail from all parts of the country, will simply devour this most valuable information and when they leave it is safe to say they will be our strongest fire prevention boosters as looking at the trees at the age of one year and then over at the giant Douglas fir at the age of 300 years surely sets them to thinking.

This same thing takes place at the camp grounds each day, and it is safe to say that over 200 visitors are given this same lecture every day during the season from June 15 to September 15. In addition to these through-visitors the thousands that visit the grounds for the day and week-end are visitors at the nursery.

Bark Beetle at Work on Coast

By J. F. Preston, Washington

Nearly 12 billion feet of yellow pine is threatened by the yellow pine bark beetle (Dendroctonus brevicomis). The area in which the beetles are working totals about 1 million acres and includes timber and land located on 4 National Forests, the Klamath Indian Reservation, the O. & C. Grant, the Public Domain, and lands owned by the State of Oregon and private individuals. A preliminary investigation has been conducted by the Forest Service during the past season and shows the following:

The total timbered area infested is 1,165,135 acres.
The total volume of yellow pine timber is 11,824,070 M ft.
Number of trees killed in 1920 - 134,868.
The volume of trees killed in 1920 - 117,220 M ft. B.M.
(A little over 800 feet B.M. per tree.)
The damage (1920) at $3.00 per M feet amounts to $351,660, which is from .7 to 1.4% of the total stand.
The estimated cost of the 1922 control is $263,745.
This is on the basis of a total cost of $4.50 per M ft. for the trees actually treated, which amounts to an average of about $4 per tree.
The estimated cost is divided as follows:

Forest Service	$26,025	
Indian Service	51,547)	Dept. of
Public Domain	17,100)	Interior $82,240
O & C Grant	13,593)	
State of Oregon	997	
Private	154,483	
	$263,745	

The total volume of yellow pine timber within the project area is divided as follows:

National Forests	1,907,620	M ft.
Indian Reservation	1,889,000	" "
Public Domain	185,000	" "
State of Oregon	14,950	" "
O & C Grant	327,000	" "
Private	7,500,500	" "
	11,824,070	" "

An appropriation of $150,000, which will enable the Federal Government to carry out its share of the control operations in cooperation with other owners has passed the lower house of Congress and is now pending in the Senate. There seems to be a very good prospect that the appropriation will be made in time to permit control operations to begin in 1922. Undoubtedly control measures will have to be carried out at least on a maintenance basis for several years following.

Memorial Tablet Insured

By R. V. Reynolds, Chairman Memorial Committee

After the purchase and installation of the Memorial Tablet there remained a balance of $35.56 in the memorial tablet fund, part of which was accrued interest.

A policy for insurance against damage by fire has been taken out upon the tablet extending over a period of five years with the Forester as beneficiary. The cost of this policy was $27.98, leaving a balance in the fund of $7.58. This balance will be placed at interest in the name of the Fiscal Agent and at the expiration of the insurance may be devoted to the purchase of an additional policy to protect the tablet.

The following facts regarding the 19 men whose names appear on the tablet may be of interest.

Place of Birth	
Pennsylvania	3
California	2
Illinois	2
New York	2
Ohio	2
Colorado	1
Connecticut	1
Indiana	1
Iowa	1
Michigan	1
Missouri	1
Nevada	1
Oregon	1

College Affiliations	
Penn. State	3
Univ. California	1
Mich. Agri. Coll.	1
Univ. Mich.	1
Univ. Idaho	1
Ohio State	1
Univ. Wyoming	1
Yale	1
Univ. Washington	1

Military Rank	
Captain	1
1st Lieut.	2
2nd Lieut.	1
Corporal	2
Pvt. 1st Cl.	1
Private	12

Dollars Well Spent

The people of Pennsylvania are getting their money's worth from the million dollars appropriated last spring by the Legislature to put down forest fires. Half of the million is being spent during the present fiscal year. This is what is being done with it, and here are some of the results:

Fifty (50) new steel fire towers, most of them sixty feet high, have been erected at the best observation points throughout the State. Every tower was completed and connected by telephone with men organized into effective fire fighting crews before the fire season began. An entirely new system of fighting forest fires, pronounced by the U. S. Forest Service to be the best in existence, was devised and installed. Firewardens and other fire fighters were equipped with fire tools, among them a new combination rake and bush hook superior to anything yet invented.

Before the Fall forest fire season opened, the Department was ready to meet it. The best way to get an idea of the results accomplished is to compare them with the average fall fire season during the previous five years.

The average number of Fall forest fires that started during the last five years was 254. In 1921 there were 197. The average area burned-over in the five years was 21,564.73 acres a year. In 1921 it was 4,085.68, or less than one-fifth.

You can not keep all fires from starting, but you can handle them promptly and effectively after they start. The best test of a forest fire organization is the average size of fires. The smaller the size the better the work. From this point of view it is worth noting that the average size of fires in the fall for the previous five years was 84.9 acres, while the average acreage per fire in 1921 was 20.73, or less than a quarter.

If we compare the results in 1921 with the best fall in the previous history of the Department, a fall of such exceptional weather conditions that only 81 fires were reported as against 197 last fall, we find that less than two-thirds of the area was burned over, while the average per fire was only one-fourth.

I am very proud of the men who have brought these results about. They have proved themselves worthy of the confidence of the people of the State, through the Legislature, have reposed in them. It is no more than fair to say that they are giving the State a dollar's worth of work for every dollar the Department of Forestry is spending.

The job of stopping forest fires is well begun. We have proved that it can be carried through if the next Legislature will give us the money to do it. In the meantime, it is some satisfaction to know that the State is not only getting what it paid for, but that increased forest growth will pay it all back.--Gifford Pinchot.

WASHINGTON NOTES

Forester Greeley and Assistant Forester Smith have returned from the Fire Conference at Mather Field.

The Forester's Annual Report will be released tomorrow, December 13. It follows directly after the report of the Secretary of Agriculture, which is released to-day.

Regarding the Reclassification Measure, which is of particular importance to all government employees, House Leader Mondell says: "Among the important pieces of legislation that the House will consider at an early date is the reclassification bill, the purpose now being to pass a bill that will be considered in connection with the estimates to be prepared by the departments next summer and fall, for the fiscal year 1924."

Harry D. Tiemann writes from Melbourne, Australia, "Have received a royal welcome here. It's a great country, much like California." At Melbourne Mr. Tiemann lectured on "Good and Bad Methods of Seasoning Timber." The lecturer was introduced by the Minister of Forests and a message of welcome to Mr. Tiemann from the Prime Minister was read.

The Society of American Foresters will hold its annual meeting, in conjunction with the Canadian Society of Forest Engineers and the American Association for Advancement of Science, at Toronto, Canada, December 27 and 28. A notable gathering of foresters is expected, and two days are to be given over to a thoroughly technical forestry program. Some 35 papers will be presented dealing with such subjects as Forest Protection and Administration, Silviculture, and Forest Pathology, Forest Botany, Wood Technology, Forest Management and Administration, etc. On the evening of December 27 a banquet will be given by the Canadian Society of Forest Engineers to the visiting delegates. The Premier of Ontario will be the guest of honor at the banquet. Representatives of the Forest Service will attend the meetings and the Detroit News will detail a special correspondent to report the proceedings.

Secretary Mellon of the Treasury in his annual report points out that the present annuities for Government employees, under the retirement act are too small. He also suggests lowering the retirement age from 70 to 68.

The Retirement Fund now has a surplus of $9,672,842.03. The average rate of annuity of the 6,471 retired employees is $568.44, and the actual value of the retirement roll is $3,678,375.24.

The Christmas Tree Celebration, held annually by members of the Washington office, is to take place on Saturday morning, December 24. Santa Claus has promised to be on hand and distribute gifts and candy to the children.

DISTRICT 1 - NORTHERN DISTRICT

The Roll of Honor of permanent Forest Service employees who have made the supreme sacrifice in line of duty is lengthened by the addition of the name of Daniel H. Bethune, Scaler on the Kaniksu National Forest, who was killed on November 4, 1921, by a falling tree which had been burned through near its base by a brush fire.

One of the Largest Factors in showing all the available information on Forest base maps is assistance and help from the Supervisor's office. From the files in the office of Engineering, it is always possible to compile maps complete as to General Land Office, United States Geological Survey, and a certain amount of private surveys. Such information serves well for a general map,

DISTRICT 1 (Cont.)

but for the 1/4" and 1/2" administrative bases, more detail is required and for this assistance must be expected from the Supervisor's office.

Recently one of the new compilations was sent to the Helena Forest for final inspection and correction. It was learned from the Supervisor that much time and effort is being put forth collecting road information from county records, and reviewing and scrutinizing current and closed files holding map information.

Such interest and cooperation is highly commendable and gratifying, and is a long step toward better and more accurate administrative base maps.

The Supervisors have just submitted the latest revised estimates of timber on their Forests. These figures show some interesting things. The species leading in volume is the lowly lodgepole pine with 18 billion feet out of the grand total for the District of 65 billion. White pine totals 6 billion feet and yellow pine 5 billion feet. The Clearwater has the highest estimate of any Forest in the District, with 6½ billion feet, of which nearly 2 billion feet is white pine. Four-fifths of the white pine in the District is concentrated on four Forests--the Clearwater, Coeur d'Alene, St. Joe and Kaniksu.

On the Coeur d'Alene: A sale estimated at two million feet was applied for, cruised and appraised, advertised, sold, contract made, timber cut and scaled, slash disposed of, and sale ready for closure--all within a space of six months.

Senate Bill No. 2656 "to authorize the exchange of privately-owned lands within, or within six miles of, the Lolo and Bitterroot National Forests for National Forest lands within said National Forests" has been introduced in Congress. When this legislation passes, considerable benefit will accrue both to local administration on the Forests and to the private owners who avail themselves of the possibilities under the Act.

DISTRICT 4. INTERMOUNTAIN DISTRICT

Forest Ranger Taylor, assisted by Deputy Game Wardens Salisbury and Hedrick, is very busy rounding up game poachers in the game preserve. While Taylor was away on one of these Sherlock Holmes trips, a very inconsiderate person purloined his Thanksgiving turkey, and from the Ranger Station yard at that.-- Boise Accelerator.

Ranger Meeting to be Held: The joint Ranger meeting of the Rangers from the Boise, Payette, Idaho, Weiser, and Sawtooth Forests is being held at Boise this week. Nearly the entire time of the meeting will be devoted to the discussion of fire questions. Mr. Osborne, fire specialist from District 6, and Mr. Baker, Supervisor of the Cabinet Forest in District 1, will be present and discuss the special topics of fire line construction and training of guards.

Mr. George Holman, in charge of predatory work for the Biological Survey, expresses the belief that the mountain lion on the Kaibab will soon be a thing of the past. The Biological Survey, under Mr. Holman's directions, has been exterminating a pretty big number of mountain lion on the Kaibab during the last year or two. Mr. Holman has made all preparations for an extensive campaign of destruction against these animals the coming winter. He believes that the number of lion on the Forest has, in recent years, been very greatly reduced. Mr. Holman states that Supervisor Roak rendered material assistance in the preparation for the campaign the coming winter.

Two Years Ago, at the request of Supervisor McCain, the District Forester sent letters of appreciation to a few people who had rendered particularly valuable service in fire suppression on the Teton. A year ago the practice was extended to five or six of the Idaho Forests. It is believed that the letters were appreciated and a few instances have come to light, where even better or further cooperation was secured during the season just passed.-- C.D.S.

Ranger Bill Says:

Now that the Forest's safe 'count of "no smokin'", I'm goin' to make her doubly safe next year by chewin'.

Its funny how these Inspectors always remember important office work soon as snow flies.

The baby ain't had a chance at the Oliver for more'n a month 'count of these dang annual reports.

DISTRICT 5 - CALIFORNIA DISTRICT

Visitors to Tahoe Public Camp: Mr. Willis Peasley, caretaker at the Tahoe Public Camp the past season, has furnished the following interesting information: total number of automobiles registered at camp, 1,038; number of people, 5,405. 922, or 88 per cent of these machines, came from California. The other 12 per cent registered from 26 other States, and the District of Columbia. The heaviest use was during the month of July, while June and September were nearly a stand-off.

The Seventh Annual Campcraft Show of the California Alpine Club was held on Mt. Tamalpais, Sunday, November 6. The show included a radio telephone concert and exhibition of camp cooking. Through the kindness of Mr. Fair the Forest Service showed a modern fire lookout station.

Interesting Cave on Modoc: On a recent trip to the Modoc the District Forester, with other Forest Officers and some visitors, took a trip into a cave in the eastern edge of the Shasta Forest not far from Round Mountain. This cave is not one that is generally known. The entrance, surrounded by brush, is very hard to find, and is not over 10 feet in circumference; but yet, when one gets into the cave he is amazed to see the extent of the underground opening. The party walked for over 600 feet through one of the tunnels and were informed by one of the local men that he had progressed for half an hour beyond the point reached by the present party without finding the end of the cave.

In some places the perimeter of the cave must have been 40 feet, while in others it narrowed down to a very small circumference because the ceiling had fallen off in places and had almost blocked the way through.

The display of stalactites and stalagmites on the ceiling and floor of this cave was a very wonderful sight. Samples were obtained which will later be shown to geologists.

In the crevices on the floor of the cave were found quantities of charcoal, which indicated that the lava in its molten form had undoubtedly submerged the forest which had previously been growing on the area.

There were cracks which were filled with water as cold as ice, very sweet to the taste. This, in a country which is known for the absolute lack of water for miles around, was a rather unusual thing to find. It probably results from seepage of snow water.

A While Back a party was camped at Bruce's Camp just north of the Mokelumne River (Eldorado Forest). A camp fire was carefully built and the party then started on a little fishing expedition. Upon returning to camp it was found that the automobile tires were burned off, their camp outfit destroyed, also clothing, etc. Several people on the Stanislaus and elsewhere have also had mighty valuable lessons of this nature during 1921.

DISTRICT 6 - NORTH PACIFIC DISTRICT

Establishing Contact: In American Lumberman of September 10, there is a good Forest Service story of a trip taken by the Lumberman's Bellingham correspondent to the Mt. Pugh lookout station on the Snoqualmie National Forest. Whoever was responsible for the correspondent's taking the trip or gave him the Forest Service "dope" did some good Public Relations work. It reads so accurately that one almost suspects it was "inspired"; and again shows the local possibilities for "selling" the Forests to newspaper men and local correspondents for bigger papers. It would pay Forest officers to go out of their way to become acquainted with such correspondents and take them along to some fire lookout; this trip paid.

Taking the Joy Out of a Ranger's Life: In northern Idaho it was recently reported that a meteor started a forest fire. From Washington we hear that phosphorus-soaked oats put out for squirrel poison are apt to become ignited through heat of the sun. Every year brings new sources of forest fires!

His Heart was in Right Place: This is one of the "No Smoking" letters that Supervisor Ramsdell of the Umpqua received:

"in reply to your leter of smoking i will say that i will agre not to smoke or pack smokin tobaco out on trails i smoke onst and a while when in or at the station but never did cary a pipe on traveling on trails So i for on will agre not to smoke out of camp as i think it aught to be very cautous of them Sigareets."

DISTRICT 7 - EASTERN DISTRICT

Chestnut Blight Continues Southward: The chestnut blight (endothia parasitica) was recently found on the Union Tanning Company timber sale on Curtis Creek, Pisgah National Forest. Specimens of the disease were sent the Bureau of Plant Industry for absolute identification. Assistant Pathologist G. F. Gravatt reported that the disease on the chestnut showed typical cankers of the blight. He also furnished the following information:

"The disease has been found in four more counties in North Carolina, making twelve counties now known to contain infection."

The recent infection found on the Pisgah is not only the most southern natural infection but also the most western natural infection. Some of the infected trees in Ohio are just east of those in North Carolina. However, there have been some infections caused from nursery trees farther south and farther west. One such infection of chestnut blight was found in central Alabama and has been eradicated for several years. As far as is known, natural infections of this disease have not occurred south of the Blue Ridge.

The chestnut oak twig disease on the Pisgah, which was considered as having serious possibilities last year, has decreased considerably during the past year. It is estimated at approximately one-fifth as abundant as in the previous few years.

Service Bulletin

U. S. FOREST SERVICE
(Contents Confidential)

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MERRY CHRISTMAS

HUNTING SPOOKS WITH POPGUNS

by
Ward Shepard, Washington

Every year some one in a more or less authoritative position comes forth with a distressing manifesto against cutting Christmas trees. Somehow the impression gains ground from year to year that the Christmas tree rather than the abused Forest Devastator is the cause of the shortage of timber.

Let us see. If the United States should use 5 million Christmas trees each year, a fully stocked area of about 5,000 acres would supply the need.

Compare this pitiful sacrifice for the pleasure of children with the immense destruction wrought by fire and by wasteful lumbering. In 1919 eight and a quarter million acres were burned over; in 1918, ten and a quarter million acres. Much of this burned land is so sterilized that it will not again grow trees without artificial reforestation. Add to this the almost universal process of destructive lumbering, and we get a true view of the utter insignificance of the Christmas tree business in the general panorama of forest destruction.

Of the forest land devastated each year by fire and the axe, between three and four million acres become practically unproductive except by artificial means and at great expense. This enormous area would produce five billion Christmas trees every 20 years, or a quarter of a billion a year--probably many times the number the whole world uses.

The cutting of trees for Christmas is a perfectly legitimate use of them. It is the forester's business to grow the wood for which there is a public demand rather than to question the ethics involved in the use of a forest product. Otherwise, how would he justify the use of wood, say, for billboards or yellow journals? With many current uses of wood, the use of

Christmas trees ranks very high in its return of satisfaction; and after all, as the economists tell us, the value of a commodity depends largely on its ability to satisfy a human want.

It is time to scrap this bogey-man. The harm wrought by the cutting of Christmas trees is infinitesimal, and is far more than offset by keeping alive in millions of people, and especially in children, respect for the forest and for trees. Macauley said the Puritans objected to bear-baiting, not because it gave pain to the bear, but because it gave pleasure to the spectators. This is a psychological danger to which the professional reformer is always exposed. Foresters and friends of forestry had better teach these reformers to go after the really big game, instead of hunting spooks with popguns.

Resolutions passed by the Pennsylvania State Forest Commission, December 12, 1921

WHEREAS, in the National Congress, the Curry Bill (H.R 5694), the King Bill (S. 2740), and the New Bill (S. 2382) provide for transferring the U. S. Forest Service and the National Forests, in whole or in part, from the Department of Agriculture to the Department of the Interior; and

WHEREAS, the proposed transfer is of immediate concern to Pennsylvania because the supply of forest products for our State and the protection of its streams will be directly affected by the kind and amount of care and protection given to the National Forest lands about to be purchased in Pennsylvania by virtue of the approval of such purchase given to the United States by the Pennsylvania Forest Commission, acting under a law passed at its request; and

WHEREAS, the Pennsylvania Forest Commission is in constant and cordial cooperation with U. S. Forest Service and in receipt of important assistance from it, both in men and money, for the prevention and extinction of forest fires, the amount and character of which assistance is determined by the authority in control of the U. S. Forest Service; and

WHEREAS, the forest work of the Government is being administered with conspicuous success in the Department of Agriculture, where it naturally belongs, and in which it was placed at the insistence of President Roosevelt; and

WHEREAS, the administration of the National Forests in the Interior Department some years ago was as conspicuously unsuccessful as it now is successful and satisfactory; and

WHEREAS, the proposed transfer would not only, in our judgment, ruin the Forest Service, but impede in the most serious way the progress of forestry throughout the Nation and in all the States, including our own, Therefore, be it:

RESOLVED, that the Pennsylvania Forest Commission protests against the proposed transfer, in whole or in part, as unnecessary, unjustified, and dangerous to the cause of forestry in Pennsylvania and the Nation; and

RESOLVED, that the Pennsylvania Forest Commission urges upon the Senators and Representatives from Pennsylvania in Congress to use all legitimate means to prevent such transfer; and

RESOLVED, that the Pennsylvania Forest Commission approves the action already taken by the Commissioner of Forestry in regard to such transfer and directs him to use all proper means to prevent the same by bringing the facts to the attention of the authorities concerned, and in all other legitimate ways; and

RESOLVED, that copies of these resolutions be forwarded to the Representatives of Pennsylvania in Congress, the Governor of Pennsylvania, and the forest authorities of all the States.

Every Ranger his Own Farmer

By Paul D. Kelleter, Washington

Raising forage crops upon ranger stations on a share basis with some kindly disposed settler is a thing of the past. The Forester has decreed that we must return to a pre-war basis and have no more harvesting on shares. This means that each Ranger must do his own farming, provided his other duties permit, or else have the harvesting done on a strict pay basis by some outsider.

Every Ranger His Own Farmer (Cont.)

The size of the forage allotment from the Supervisors in terms of dollars is not the controlling factor in regard to crop share harvest. Sometimes it is out of the question to get such work done on a money basis, for very often the forage obtained on shares means more to the outsider than the money.

The present policy will bring with it the necessity for purchasing farm implements to a greater degree than up to the present time.

There are many advantages in the new policy. The Forest Service does not augment its appropriation through the conversion of a Forest resource. There is no advantage to parties having no official standing through the benefits of crops from agricultural lands. Lands withdrawn are put to the use intended. If not, releases are in order. And, last of all, the new policy removes all chance of unfounded suspicion that the local Forest officer is deriving a personal benefit from the withdrawal and sharing of the crop.

Grazing Administration on Private Lands

By Walt L. Dutton, D-6

Range appraisal is expected to bring to light many new and unique methods used in connection with range management and grazing administration. In District 6 the appraisal studies have uncovered a case which, so far as our observation goes, is in a class by itself. The case presents an unusual example of range management and grazing administration as carried on outside the Service, and at the same time offers an educational lesson on how the other fellow does it.

Baker, Oregon, in the Blue Mountain region of eastern Oregon, is the headquarters of the W. C. Calder grazing land agency and also the headquarters of the Whitman National Forest. Mr. Calder handles the leasing and administration of approximately 300,000 acres of privately-owned timbered and untimbered grazing land in and adjacent to this Forest. He deals with both sheep and cattlemen.

For comparative purposes two sheep allotments have been chosen. One is a National Forest sheep allotment in the south end of the Whitman Forest just inside the Forest boundary; the other a private land allotment just outside the Forest boundary and joining the Forest allotment on the east, with a tabular comparison as follows:

Unit	Acres	Season used	Capacity for $3\frac{1}{2}$ mo.	Acres per head	Seasonal Cost per head
Forest Range	7,198	$3\frac{1}{2}$ mo.	1809	3.9	11-3/4¢
Private Range	10,169	$3\frac{1}{2}$ mo.	2905	3.5	65-1/2¢

The seasonal cost per head for forest range includes grazing fees.

The seasonal cost on private range includes rental of private land at $.15 an acre, pro rata assessment covering cost of drift fence and hire of range riders.

From the standpoint of topography, forage and water, the two allotments are practically identical. The permittee who uses the Forest unit can reach his range in a half day's drive from his home ranch, but the permittee on the leased land arrives at his allotment after seventeen tortuous days on the trail between home ranch and range.

Essentially, Calder's policy of management and administration calls for the protection and permanent use of his forage resources and thus far he parallels the underlying principles of the Service regulations. For the small owner or new beginner, however, he feels no obligations, and the promotion of home building in the West does not enter into his business dealings. His permittees, especially sheep owners, are selected on the basis of being substantial and desirable individuals who are equipped with the experience, finances and plant to operate successfully, and who meet certain conditions interposed by Calder and designed for the good of the range. These conditions are equivalent to a modification of the more intensive range management plans practiced by Forest permittees in some instances. From Calder's viewpoint any user who qualifies under these conditions is a Class A man and the tenure of his permit hinges thereon. If a user does not qualify his numbers are not reduced nor is his preference cut; he is simply cancelled out and a more desirable permittee given the range. Calder's regulations do not contain such terms as protective and maximum limits, or prior and regular use preferences.

Grazing Administration on Private Lands (Cont.)

In handling trespass a few years ago Calder collected damages from the trespasser and turned the money over to the parties whose range had been trespassed. Later, learning that the trespassed and the trespasser effected secretly a redistribution of the fines, he adopted the policy of collecting damages and retaining the money to compensate for time and trouble in settling disputes. There is no longer any trespass between his permittees. When it becomes necessary to prohibit grazing in order to protect any part of his range, he takes the action then and there without the formality of a request for an investigation, and without any exchange of correspondance. A direct instruction to the permittee closes the case, and an appeal is out of the question because Calder himself is administrator, investigator and the court of last appeals.

Calder's rentals are due and payable in advance on January 1 of each year. Cost of administering and looking after the ranges is totalled and prorated among permittees on an acreage basis and assessments levied annually on each permittee.

Many Are Snapped - But Few Are Chosen

During a period of four months, August 8 to December 8, there were received in the Washington office 6,454 photographic negatives from Forest officers. Prints of all these pictures have been reviewed by the writer, and a total of 718, or about 11 per cent selected for the Service collection. Not all the rejected prints were poor pictures, many of them being under minimum size (3-1/4 x 4-1/4), or taken for record purposes only, but generally speaking, they were far below the standard we should strive to attain in our photographic work. When from 75 to 90 per cent of the negatives received from the field are worthless either for record or reproduction, a situation confronts us which calls for serious thought.

Granted that all men are not "born photographers," and that much of our equipment is below standard, still there is room for a big improvement in our picture-taking work. Most of the failures are due, I think, to one or more of the following causes:

1. Lack of appreciation of the limitations of the camera, both as to the scope of country that can be covered in a picture and details that can be shown by a small machine as compared with one of large size.

2. A tendency to "snap" a picture without taking the time necessary to study the view from different angles, and to "frame-up" the scene in an artistic and effective manner, so that the finished picture will record the particular feature one wishes to emphasize.

3. Failure to make a study of correct stop and exposure to produce the best results under varying light conditions. These points are, naturally, learned by experience, but there are many good exposure tables on the market that are of more or less help to amateurs. A record should be kept of all exposures and light conditions and studied in connection with results produced.

4. Making photographic work purely a side-line in connection with other field activities, and giving it little time and less thought. In this connection it is well to remember that good pictures don't "just happen."

There are also a host of other points, too numerous to mention, which go to make the finished product good or bad. For instance, it is not high-class photography to cut off a man's head or legs in a picture; a saddled but riderless horse, or an automobile with doors open and no one in it does not add to a scene; men posing for their picture when they should be at work, or gracefully draped over the landscape, is poor form in a photograph; the same is generally true of a road running straight out of a scene or a lake flowing out of three sides of a picture. These are just common, every-day examples.

Patience, thoroughness, close study of details, and an everlasting determination to make every picture a good one goes a long way towards success in photography.

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From an old fire report: "Cause of fire--Lightning. "Action recommended--Civil."

WASHINGTON NOTES

That China is alive to the urgent need of afforestation is shown by the fact that 21 forestry institutions in central and north China set out 130,000,000 trees during 1920.--Clipped.

Figures from the 1920 census show that in 1919 the value of forest products on farms was $394,321,828. Farms reporting forest products numbered 2,014,3[illegible]6, or 31.2 per cent of all the farms.

Receipts from National Forests for November, 1921, totaled $306,190.94, an increase of $93,357.00 over the corresponding month of 1920.

The Secretary has appointed a Department board on Government contracts, the function of which is to recommend policies to control in the standardization of contracts within the department.

Paul D. Kelleter of the Washington office is one of the three members of the new board.

Supervisor's meetings are to be held in the various Districts as follows:

District 1 .... January 16-21, inclusive.
" 3 .... February 6-11, "
" 5 .... January 30-Feb. 4, "
" 6 .... January 23-28, "

It is planned that Messrs. Kelleter and Kelley will attend these meetings.

The directors of the Theodore Roosevelt International Highway Association recently adopted a resolution proposing that the name of the Minnesota National Forest be changed to Roosevelt National Forest.

DISTRICT 2 - ROCKY MOUNTAIN DISTRICT

Cattle Shipments Increase: Cattle shipments to the Denver market continue rather heavy and the market is showing a little more strength due, no doubt, to the influence of the War Finance Corporation making money more readily obtainable.

Value of Grazing Preferences: In the determination of assets in support of loans to stockmen by the War Finance Corporation, the Corporation placed a value of $2,000 upon a grazing preference of 380 head of cattle on one of the Wyoming Forests, or a rate of $5.26 per head. Generally in appraising the value of land in support of these War Finance loans, the Wyoming division appraises native hay land at $20 per acre, range land at $10 per acre and for preferences, $5 per head on the cattle and $1.50 per head on sheep.

Colorado Glacier Association Formed: On November 29, a meeting was called by the Boulder Commercial Association of Colorado. Representatives of the several commercial organizations within the county were invited, together with representatives of the Forest Service, of the Denver city government and the Denver Tourist and Publicity Bureau.

The President of the San Isabel Public Recreation Association, who was asked to give the principal address of the evening, informed the meeting of the objects and advantages of a recreation association resulting from the experience of the San Isabel Association.

A study of the Colorado Forest region just within and west of Boulder County was made last season, and reports indicate big possibilities for recreation development there by reason of the existence of several glaciers which can be made easily accessible. Boulder County has become so enthusiastic about the matter that a recreation association was formed and a determination reached to incorporate it that it might have an organization which would assist the Forest Service in the management of that region and help in its development.

Denver was well represented and expressed great interest in the matter. This is a very favorable sign and encouragement is given to the belief that possibly Denver will now get in line with other interested communities in the State and work for the protection and development of National Forests.

Cliff Dwellers Ruins in the National Forests: Last summer a permit was issued by the Secretary to the State of Colorado for the excavation of antiquities in the San Juan National Forest, based upon the application of J. A. Jeancon, Director and Curator of the Department of Archaeology and Ethnology of the State Historical and Natural History Society. As a result of the season's investigations, it is now reported that entire villages of the Cliff Dwellers have been discovered and considerable progress made in excavation. The extent of the ruins is not yet known, but enough has been learned to justify the conclusion that it is a very large area and that the ruins probably exceed in area and interest those existing within the Mesa Verde National Park not far away.

Road construction work continued later than ever before in the history of the District; Berthoud Pass road running full blast until November 30.

DISTRICT 3 - SOUTHWESTERN DISTRICT

Forest Types: Students of forest types may be interested in the following list of trees found on a single acre at 7,500 feet elevation in a Chiricahua canyon: White fir, Douglas fir, Mexican white pine, Apache pine, gambel, netleaf and silver-leaf oak, dwarf maple, ash, sycamore. Nearby, on a south slope, is a thicket of aspen surrounded by a dense stand of live oaks.

Mr. and Mrs. Chapline Arrive: Inspector of Grazing Chapline, of the Washington office, came in from Arizona to take part in the Grazing Studies Conference. Mr. Chapline has been in the District several times, but he has always come alone heretofore. On the seventh of December there was a wedding out in Phoenix and Miss Eve Behn became Mrs. Chapline.

Wholesale Trespass Intercepted: Rangers Warnock and Beckwith on November 29 made what is probably the largest trespass haul in point of persons involved known to District 3 in recent years. Twenty-two native wood haulers were intercepted on Otero-Bonito Divide in the act of taking wood from Government land for commercial purposes without permit or sale. Complete evidence was secured in every case and a number of them have already settled. The total amount involved is $110.00. Everyone acquainted with conditions on the Northern District of the Manzano is aware of the complicated problem confronting the administration of cordwood sales and free use. However, with a few more raids similar to this, we should be in a fair way to control the situation.

Promontory Butte Tower: It was in 1913 that National Forest Examiner Charles N. Kissam, then Deputy Supervisor on the Sitgreaves, designed and with the assistance of Fred Turley, George Flake, Dan Morgan, Bob Grissom and one or two others, built the famous 116-foot wooden lookout tower on the Chevalon District of that Forest. It stands on Promontory Butte, which has an altitude of about eight thousand feet, about seventy miles out from Winslow. For nearly a decade this tower has borne aloft at higher or lower elevations, according to the courage of the climber, the men who have scanned the surrounding country for smokes. Now it is to come down. Many inspections by Washington and D.O. men, as well as by Supervisor Hoyt, agree that while possibly this well-known forest landmark, which has been featured in fiction, might endure for another season, it is safer to take no further risks with the high widds that assail the exposed point and so it is to be abandoned and destroyed. How its place in the fire detection scheme will be filled, whether by a tower of steel in the same location or by cross readings from other points, has not yet been decided, but a study is being carried on to determine how best to meet the need in time for the next fire season.

Ranger Bill Says:

You can't always figger the value of friendship by the price marks on the Xmas cards you get.

The file records 'fore 1905 is the best argument I know of against transferrin' the Forest Service.

Elsie Smith our new steno. has changed her brand of face powder, said my wife, sniffin' the latest official mail.

DISTRICT 5 - CALIFORNIA DISTRICT

She Snapped Into It: Sex cuts no figure in the California District when it comes to a question of giving first-aid treatment to incipient blazes. Miss Carrie Green, S & T on the Shasta Forest, found a fire where it hadn't orter be, and carried (no pun intended) out her plan of attack just as if she had been a real honest-to-goodness Ranger or Guard. She put a line around the fire, searched for clues, then rode four miles to the nearest phone and called for assistance. This prompt action on her part resulted in confining the blaze to one-fifth of an acre.

While Ranger Hamilton was phoning Ranger Mendenhall from Sunland, a fire was discovered in the town of Tejunga. The conversation ceased at once and Hamilton proceeded to a fire which proved to be a small one adjacent to the schoolhouse. County Fire Warden Leo Lang arrived at the same time with the county trailer equipped with fire extinguishers. The citizens turned out in less than thirty minutes the fire was extinguished. Investigation showed that the fire was caused by some small children playing with matches. The guilty one was found and the principal of the school immediately called an assembly; talks were called for from Ranger Hamilton and Mr. Lang. The lectures must have been short but effective, since Ranger Hamilton writes: "The fire, lectures and all took place in less than one hour and a half."

The Lonely F. S. Lookouts on the remote mountain tops in the northern Sierras last Sunday had the privilege of reading Sunday's "Examiner" as early as 9 o'clock in the morning. Cadet "Jimmy" Doles flying from the Air Patrol Base at Corning carried with him a load of Examiners which had arrived on the early morning train. With him, as observer, was Private Thorne. As the big De Haviland soared high above the peaks, Thorne attached Examiners in well-wrapped rolls to the handle of small parachutes. Far below a tiny lookout station would appear, and just as the right moment the parachute would go swooping gently downward with its burden of news. It is not hard to imagine how much the lookouts appreciated receiving the latest news, and we are glad to say that Cadet Doles expects to repeat the stunt.

Fish in Mono Waters: Trout planting in Mono waters has been conducted on a much larger scale last summer than heretofore. Mono County expended $850.00 for this purpose, while Alpine also shouldered its share. In addition, the Forest Service planted quite a number. The Fish and Game Club of Carson Valley also took an active interest and secured stock from the Nevada hatchery. In looking over results of past planting we feel that the results have well justified the efforts. Golden trout, which Ranger Green planted two years ago, have been taken the past summer in Leevining and Rush creeks, having attained a length of 9 inches. The waters of upper Rush Creek, heretofore barren, now are nicely stocked with Eastern Brook. Ranger Atcheson who, likewise, two years ago stocked the Upper Walker, reports an abundant supply of fine large ones. The two latter plantings are located where only horse or foot tourists can reach them.

We Live and Learn

A persistent rumor hath it that the following definition of a National Forest is taught to the school children of Montana. Forest Service, Attention!

"National Forests are vast areas of mountainous land administered by Forest Rangers who live a careless, carefree life in the woods."

The Editor, who is a prudent man, refrains from comment.--Clipped.

Have You Read It? D-3 says: "The Illustrative Cases of Fire Law Enforcement can not be expected to illustrate anything if merely used to ornament the office with its handsome sky blue cover. This collection was sent out to be read--by everybody, including District officers. If there is anybody who already knows plenty about law enforcement, let him send in his name. He may be wanted as a detective." And we of D-6 agree.

Greater Use: Exclusive of rough lumber, flooring, ceiling, etc., the consumption of wood for the manufacture of forest products within the State of Washington amounted to over 750 million feet in 1920, which is 100 per cent greater than in 1915.

Excerpt from a News Letter: "Mr. Ed. Rasmusson of the Biological Survey was an office visitor on October 11. He started three men with thirty-five head of sheep up on the Forest east of Ephraim, where they will be poisoned and left for the coyotes."

Crown Fires in Douglas Fir

by J. V. Hofmann, D-6

The fire situation in the Douglas fir region of the Pacific Northwest is one of the most important problems of the timber owner and forester in the solution of the nonproductive land problem and the preservation of present stands of merchantable timber and young growth.

Due to increasing fire protection the number of large fires has been materially reduced and so long as fires can be confined to small areas the destructive crown fire does not readily develop. The crown fire is the chief source of danger to the timbered areas and it is the one over which man has little control after it begins its destructive march through the forest. The only way to guard against it is through prevention. A crown fire may flare up on a slope or before a gust of wind, but the fires that have left thousands of acres of glaring white and charred snags in their wake are due to other than local factors.

The principal inflammable material that carries a crown fire is the needle. If the needles will not burn, a crown fire is not possible, and the more inflammable the needles become, the more readily will a crown fire start and spread. Douglas fir needles will ignite when they contain about 35 per cent of moisture based on the dry weight of the needles. Consequently any amount of moisture greater than 35 per cent must be evaporated before the needles will burn.

The water content of Douglas fir needles varies greatly throughout the season. During 1921 the per cent of water content of needles in mature Douglas fir was as follows: Early May 95.[illegible]; early July 77.3%; and late September 100.4%. At the same time the per cent of water content of well stocked young growth 13 years old was 120.8% in early May; 99.0% in early July, and 115.3% in late September. This means that a fire, in order to burn Douglas fir needles and spread, must evaporate the following amounts of water based on the dry weight of the needles:

	Early May	Early July	Late September
In mature timber	60.[illegible]	42.3%	65.4%
In young growth	85.8%	64.0%	80.3%

From these figures it is readily seen that a crown fire will spread most rapidly in summer in either mature timber or young growth; also that young growth is not as great a fire hazard as mature timber. Young growth, during the driest season, is not as inflammable as the mature timber in the spring.

Knowing when the crown fires will develope and spread most readily is valuable in determining the time of slash burning or back firing from timber and the possible chance of timber stopping a fire, or the necessity of keeping a fire from getting to the mature timber or young growth.

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